

Selected Emails

1 Introduction

I was successful and enjoying a lucrative salary when decided to switch my career from software developer to hightech researcher. I quit my job and started a second Masters in Applied Sciences from Carleton University in September 2008 and graduated in August 2010. From September 2010, I started a PhD at the Electrical and Computer Engineering (ECE) Department of University of Waterloo (UW). After meeting with my supervisors, I decided either to change my supervisors or leave UW. In November 2010, I was interviewed by Dr. C and Dr. A of Cheriton School of Computer Science (SCS) of UW and they gave me an informal offer to start a PhD in Computer Science under their supervision at SCS. Dr. A informed me that he was my (main) supervisor. After experiencing multiple professional misconducts and knowing that my supervisors were working on a heavily funded hoax research project, I informed SCS administration about Dr. C, Dr. A, and their research project. I refused to work with them from April 2014. I did not know that Dr. C and Dr. A were doing a heavily-funded research project and UW was gaurantor for the successful completion of the project. UW did not investigate my complaint and a faculty member Dr. Ka was appointed as my new supervisor with Dr. T and Dr. W were my committee members. Dr. Ka and the two committee members were planted by UW to make sure that I would make no progress and leave the university because it was required to cover up the research project scandal.

During the supervision, Dr. Ka's behaviour was not only demoralizing and frustratung but also insulting. He shared my scholarly work with a committee member and breached IP policy of UW. He refused to continue supervision after I passed my Comp2 (Comprehensive 2 or proposal) exam. I worked without a supervisor for more than a year. UW asked me to find a supervisor or leave the university. My enrolment was terminated in July 2016 due to not having a supervisor. I was not given a right of filing a grievance. I was asked to pay more than \$84,000 student loan to governments of Canada and Ontario while my career was already finished. Later on, I came to know that Dr. A was not my supervisor and he was not even eligible to supervise a PhD student. In January 2019, I learned that Dr. C, the principle investigator of the hoax research project, was my supervisor in the first three years of my PhD although I never had a meeting with him in that period of time. I filed a lawsuit against UW in May 2018 (*Shafique v. University of Waterloo*). The Court issued an Order on April 23, 2019, and used initials of the last names of the employees of UW for privacy reasons. In accordance to the order, I am using the same initials in this document. This document in about selected emails communicated during my PhD studies at UW. More than 350 emails were exchanged however I included almost 16% of those to keep this document short. I have added short **Notes** to explain background of the emails to maintain continuity.

Rest of this document is organized as follows: Section 2 outlines important guidelines, and polices that UW and its students are obliged to follow. Section 3 is about my supervisors and research at UW. Section 4 is about the timeline and order of the important events. And Section 5 contains the true text of the selected emails. Notes are added only for explanation purposes. I will also make text of all the relevant emails available.

2 Guidelines, Policies and Integrity in Research

Employees and students of UW are obliged to follow its guidelines and policies. The Guide for Graduate Research and Supervision 2011 (GGRS) defines roles and responsibility of the departments/schools, administrators, supervisors and graduate students. The followings are the most relevant clauses of GGRS.

Roles and Responsibilities of Departments/Schools: ...Acceptance of a student into a program carries with it an obligation to provide supervision and/ or advice to the student as long as the student remains in good standing in their academic program. (1.2) Hold graduate orientation sessions to inform students of key policies related to intellectual property (Policy 73) and integrity in research... (1.3) Inform students through various means of the services available to them, particularly those that deal with sexual harassment, discrimination and special needs... (1.5) Ensure that all policies, procedures and regulations with respect to graduate programs are accessible and adhered to... (1.9) Ensure that every student has a supervisor or advisor... (1.11) ... However, no student should be left without supervision for more than two months. (1.15) Respond promptly to requests for the replacement of a supervisor or Advisory Committee member. The department has a responsibility to review the case in order to secure alternative supervision where appropriate. If the department has reason to believe that adequate supervision is not being provided, it should investigate the situation and take appropriate action which may, in extreme cases, include curtailment of supervisory status.

Roles and Responsibilities of Supervisors: (2.7) Thoroughly examine all written materials relevant to the thesis or research paper submitted by their students and provide constructive suggestions in a timely manner (two to four weeks depending on the complexity of the document), preferably in writing... (2.11) In cases where financial assistance is to be provided from research grants or contracts under their direction, communicate clearly and in writing to their students the terms (e.g., amounts, length of time, conditions) of the financial commitment. (2.14) Encourage the dissemination of research results by publication in scholarly and research journals, presentation at conferences and seminars.

Roles and Responsibilities of Graduate Students: (3.16) Inform the Graduate Officer, in writing, should a personal or professional conflict with their supervisor or an Advisory Committee member occur. Every effort should be made to resolve a conflict before resorting to formal procedures as defined in University Policies 70 and 71.

Roles and Responsibilities of Advisory Committee: Members are selected based on their fields of expertise, the nature and planning of the research project and to complement the expertise of the supervisor....

Policy 73 – Intellectual Property Rights: Policy 73 mentions that student's scholarly writing submitted to the supervisor for evaluation is protected under Policy 73.

Integrity in Research Administrative Guidelines 2013 (IRAG): Defines the process of reporting and handling research misconducts at UW. IRAG mentions that all allegations or information about research misconducts must be reported to Vice-President University Research. The university had established investigation and internal/external reporting mechanism of the outcomes.

The Research Misconducts: The list contains several misconducts. Some are: redundant publication, invalid authorship, misrepresentation in an agency documents, and mismanagement of grants.

Penalties: A substantiated research misconduct severely affects reputation of university, research grants it receives, and profiles of its researchers. The university would have to return the research funding to the funding provider in parallel to facing adverse publicity and temporary or permanent ineligibility for future funding. It might have to face the revocation of Canada Research Chair positions held by its different researchers and faculty members.

UW can amend or remove any existing policies or guidelines. It also has privilege of making new policies without permission from any external body. Departments and schools of UW also have privilege to make their own additional policies. SCS has its own policies in addition to UW policies and guidelines. It has privilege to change them any time. I was unaware that UW had policies, guidelines, and procedures which formed the implied terms of contract between UW and its students.

3 My SCS Supervisors and Research

In November 2010, I was interviewed by Dr. C and Dr. A in SCS building. They gave me an informal admission offer to PhD program of SCS UW. I did not know that Dr. C. And Dr. A. were not regular employees of UW and were working on a research project for which they got multi-million dollars research funding from public and private sectors. I was unaware that they could not supervise me without having a regular faculty member in my PhD advisory committee. They arranged an SCS faculty member to work as my co-supervisor to form my advisory committee. I got admission offer on January 20, 2011, and was informed that Dr. C, Dr. A, and the regular faculty member were my co-supervisors. Later on, Dr. A informed me that he was my (main) supervisor and the other two would work as my co-supervisors. Dr. A did not give importance to my research and learning (details in emails) and required me doing some presentations to visitors from Brazil. After experiencing a number of professional misconducts from him, I met with Dr. Ke, Graduate Director SCS, in March 2014 to request him replace Dr. A with some faculty member interested in doing research with a student. Dr. Ke said that students were responsible to arrange alternative supervisors for themselves (it was violation of GGRS). I talked to multiple faculty members at SCS and two of them agreed but had no funding. SCS refused to provide funding and I was forced to continue with Dr. A. In April 2014, I had to postpone my proposal exam due to unprofessional conduct of my supervisor (details in emails section). I investigated mysterious presence of Dr. A and Dr. C at UW and found that they were working on a mega-research project. Ministry of Environment, Ministry of Health Promotion, and Ministry of Natural Resources with many other companies and a university from Brazil were partners in the project. The project was allocated more than \$6,000,000 research funding from public and private sectors. I had been working with Dr. C and Dr. A for more than 3 years and never knew that they were working on a mega-research project. I was unaware that UW was guarantor for the successful completion of the research project. Dr. C was the principle while Dr. A was a co-investigator.

I again met with SCS administration in April 2014 and informed them about the collapse of my research proposal exam and that Dr. C and Dr. A were working on a hoax research project. I refused to work with them. SCS administration was obliged to follow UW policies and guidelines to investigate my complaint. They were obliged to ask for written details of my complaint to register it (Section 3.16 of GGRS). UW did not follow its own policies and guidelines to avoid the severe consequences. The formal processes of appointing a new supervisor was not followed. Dr. Ke, Director Graduate SCS, arranged a presentation for

me to present my research concepts to potential supervisors. On May 2, 2014, the presentation was attended by almost 7 faculty members and more than 20 graduate students of SCS. I had one-on-one meetings with the potential supervisors after the presentation and one of them, Dr. Ka, agreed to supervise me. Two SCS faculty members Dr. T and Dr. W became my committee members and I was asked to pass my proposal exam in a year to continue PhD at SCS UW. I did not know that the most painful period of my life had started to destroy my career and health to cover-up a research funding scandal. In 13 months of the supervision, Dr. Ka used different tactics to make all arrangements to stop me from making progress so that I could be failed in the Comp2 exam and required to leave the university due to insufficient progress. He arranged one-on-one weekly meetings with me where I never felt respected. Being an experienced university professor, he knew how to play with psychology of a graduate student. On the other side, I was trying to save future of my family because I knew that I would have no career if fail. I worked 70-80 hours per week in those 13 months and was able to solve an old research problem to substantially improve performance of content-based routing systems like Facebook, Twitter, LinkedIn, etc. Dr. Ka breached IP Policy 73 of UW by sharing my research scholarly writing with a committee member Dr. T. He resigned from my supervision after I passed proposal (Comp2) exam in June 2015. SCS UW administration started requiring that either I find a supervisor or withdraw voluntarily. I tried my best but no faculty member agreed to supervise me. My health started getting affected due to the circumstances that I was facing. I was unaware that UW had policies and guidelines and whatever I was being asked to follow was illegitimate. Meanwhile, I did a research presentation at the University of Toronto and a renowned professor in my research area working there agreed to co-supervise me. However UW refused to provide a supervisor because they were committed to cover-up the financial research scandal by destroying my health and career. Details of my health issues are provided in a separate document. From March 2016 till September 2016, I visited emergencies of four different hospitals of Ontario and also waited for more than 9 months to get access to a psychiatrist. In October 2016, I left Canada and went to Pakistan for my medical treatment. I returned in November 2017 and decided to file a lawsuit against UW. I offered regular fees and contingency but no lawyer took up my case. Depressed with my family situation and health issues, I decided to represent myself and filed a lawsuit against UW in May 2018. In preparation for a Court appearance in January 2019, I learned that Dr. C, the principle investigator of the \$6,000,000 hoax research project, was my PhD supervisor from January 2011 till April 2014. I never had a meeting with him during that period of time.

4 Timeline

I met with Dr. C and Dr. A in November 2010 in SCS building. I did not know they were not regular employees of UW. From January 2011 till April 2014, I was supervised by Dr. A but I did not know that he was not my supervisor. From May 2014 till June 2015, I was supervised by Dr. Ka who was a regular faculty member at SCS UW. He resigned from my supervision from June 2015 after I passed the proposal defence exam. I did not know that he was planted by UW to cover up the research funding scandal. In September 2015, I came to know that UW had policies and guidelines. From July 2015 till my termination in July 2016, I was a PhD student without a supervisor. On March 3, 2016, I filed a grievance for internal hearing at UW and got a final reply on July 6, 2016. In June 2016, I sent my family to Pakistan and I moved to Mississauga because we started having some security issues in Waterloo. From March 2016 till September 2016, I visited

emergencies of 4 different hospitals of Ontario and left Canada in October 2016 to get medical treatment in Pakistan. I and my family returned to Canada in November 2017. We currently reside in Brampton Ontario.

5 Emails

From: Shafique Muhammad mohamed.shafique@gmail.com
Subject: Funding Arrangements
Date: November 24, 2010 at 12:50
To: [REDACTED] uwaterloo.ca

Hi Prof. [REDACTED] C [REDACTED]

CS office say that they are waiting for funding confirmation from you and can't proceed to the transfer. May I know when the funding arrangements will be confirmed?

Regards,
Shafique

Note:

In processing of my enrolment in PhD computer science, the Graduate Office of SCS required funding confirmation before giving me formal offer to start PhD at SCS. Dr. A advised me to send an email to Dr. C to confirm my research funding. I did not know that Dr. C was the principle investigator of a research project. He confirmed my research funding to SCS office.

Dear Muhammad,

We are pleased to inform you that you have been offered admission to the Computer Science, PhD program.

To view your Offer of Admission on Quest www.quest.uwaterloo.ca, select the *Program link under Admissions to get to your Application page*. A paper Offer of Admission will be mailed to you from the Graduate Studies Office.

Please accept or decline the terms of your Offer of Admission using Quest within 3 weeks of the date of your offer.

You should also review our New Graduate Student Checklist
www.grad.uwaterloo.ca/students/current/newstudents.asp.

Congratulations, and we look forward to you joining our graduate program.

Sincerely,

Graduate Studies Office
University of Waterloo

Note:

I received the admission offer on January 20, 2011, while classes had already started from January 4, 2011. There were two reasons of that delay: (i) there was no transfer process from ECE to SCS and therefore a new admission application was filed on December 14, 2010; (ii) Dr. C and Dr. A were not regular employees of UW and could not form my PhD advisory committee without having a regular faculty member in the committee (I did not know that requirement). In mid of January 2011, Dr. C and Dr. A were able to find a regular faculty member of SCS who agreed to be my co-supervisor. I never met with him and he worked in entirely different research area. The offer letter mentioned that Dr. A, Dr. C, and the regular faculty member were my co-supervisors. Later on, Dr. A confirmed that he was my (main) supervisor, while the other two professors were co-supervisors.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
Subject: About the co-supervisor
Date: December 14, 2012 at 02:12
To: [REDACTED]@uwaterloo.ca



Hi [REDACTED]

Yesterday we talked about a possible change in co-supervisor. It seems to me that wither [REDACTED] or [REDACTED] might be more helpful in our work. Prof. [REDACTED] seems having research interests which have almost no overlap with our work. Just an opinion.

B

Shafique

Note:

Dr. A asked me in a meeting to replace my co-supervisor (the regular faculty member) with another regular faculty member Dr. B who was a close friend of Dr. C. Dr. B's research area had no overlap with my research and I was already getting no help from my supervisor and co-supervisors. I protested against appointing Dr. B as my co-supervisor and proposed two faculty members (Dr. Ka and Dr. TT) in the above email to get help in research. The email was not replied and I had to sign the co-supervisor replacement form after getting a phone call from Dr. A.

I wanted to avoid any conflict with Dr. A without knowing that he was neither a regular faculty member nor my supervisor.

From: [REDACTED]@uwaterloo.ca
 Subject: Re: Proposal Outline
 Date: November 13, 2013 at 17:07
 To: Shafique Ahmad Idresi mohamed.shafique@gmail.com

Hi Shafique,
 I have read the document and I like it. This is exactly what we need.
 I have lots of comments but overall I think it is very good.
 Now we need a (1) brief, unifying, description of the approach, with
 (2) summarized problems and (3) research questions; (4) contributions;
 (5) tentative schedule. I guess you already have (5) related work;
 (6) potential contributions per sub-area.
 Think about that before our meeting on Friday, so that we can
 complete the Comp-II document, and decide about
 your PhD committee and presentation.

Shafique Ahmad Idresi wrote:

Hi [REDACTED]
 Can we meet at 1:00 pm instead of 11:00 am?

Shafique

On Wed, Nov 13, 2013 at 10:31 AM, [REDACTED]@uwaterloo.ca wrote:

Hi Shafique,
 Great. I will read the proposal outline. How about Friday at 11am?

Shafique Ahmad Idresi wrote:

Hi [REDACTED]
 Kindly find attached proposal outline. It covers almost all
 aspects/areas we have discussed.

Regards,
 Shafique

Note:

After my protest against appointment of Dr. B as my co-supervisor (page 3), Dr. A asked me to explore multiple research areas to identify and document potential research problems in each of them. His idea was to select one or more research problems to write PhD research proposal. I spent almost a year on that activity and sent a proposal outline identifying potential research problems in each research area. Dr. A acknowledged that effort in the above email but never shared his lots of comments with me. I followed all instructions from him without knowing that he was not my supervisor and wasting my time. A student has to focus on specific problem to provide new or improve existing solutions. I prepared my Comp2 document following the outline document. No feedback was provided at any stage and Dr. A asked me to send the Comp2 document (a list of potential research problems) to thesis committee members. I protested because the document was not a proposal document but Dr. A pushed me to send the document.

I met with Dr. Ke, SCS Director Graduate, and explained to him the situation and requested to change Dr. A with some faculty member who is interested in doing research. He said that it was responsibility of student to find alternative supervisor. SCS would provide no help. I talked to different faculty members and two of them (Dr. Ka and Dr. W) agreed to supervise me but had no funding. SCS administration refused to arrange funding and I had to continue with Dr. A. At that time, I did not know that Dr. C and Dr. A were not regular employees of UW and were working a heavily funded research project.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
 Subject: Approach of PhD Comp-II Committee members
 Date: March 26, 2014 at 02:50
 To: [REDACTED]@uwaterloo.ca

SM

Dear Professor [REDACTED] *Ke*

The choice of my PhD Committee members has been finalized, and will include professors [REDACTED] [REDACTED] C [REDACTED] (co-supervisor), [REDACTED] B [REDACTED] (co-supervisor), and [REDACTED] A [REDACTED] (supervisor). The committee members were chosen because the thesis involves research on the architecture of elastic and self-aware publish-subscribe systems for Web and cloud services and is, therefore, related to software engineering and distributed systems.

I look forward to receiving your approval. After the committee is approved, I will arrange a date for the Comp-II presentation.

Best regards,
 Shafique

Note:

I sent the above email to Graduate Director SCS to get approval for my PhD committee for the proposal (Comp2 or CompII) exam, which was set to be on April 21, 2014. Graduate Director knew or ought to have known that Dr. A was not my supervisor and even could not supervise a PhD student. The committee was approved.

A committee member assured that I would fail the Comp2 exam because the proposal document was not a research document but merely a document describing potential research problems. I informed Dr. A about the comments and he advised me to switch to another research area to write a fresh research proposal. I postponed my proposal defence exam and I tried to understand the mysterious presence of Dr. C and Dr. A at UW. I came to know that they were working on a research project for which they received multi-million dollar research funding from public and private sectors. I was working with them for more than 3 years but did not know about the research project. I met again with Dr. Ke and informed him about collapse of Comp2 exam and the unseen research project that Dr. C and Dr. A were supposedly doing. I did not know that UW was the guarantor for the successful completion of the project. I refused to work with Dr. A and Dr. C. I met with Director SCS and Graduate Director SCS but they refused to arrange a supervisor for me.

I was unaware that SCS administration was obliged to investigate my complain according to UW policies, GGRS and IRAG. I was unaware of the consequences UW would have to face in terms of its repute and external findings if a research misconduct would substantiate. As per instructions from SCS administration, I did a presentation on May 2, 2014, to potential supervisors. After the presentation Dr. Ka, a regular faculty member at SCS, agreed to supervise me. SCS started providing me research funding from May 2014. SCS administration had previously refused providing me funding when my complaint about Dr. A did not include information about the research project. UW did not formally investigate the change of supervisor and my complaints. A formal investigation of the matter would reveal the facts about Dr. C, Dr. A, and their research.

From: cs-gradd@uwaterloo.ca
 Subject: Re: Supervision - Shafique Muhammad
 Date: May 29, 2014 at 10:02
 To: [REDACTED]@uwaterloo.ca
 Cc: mbshafiq@uwaterloo.ca, [REDACTED]@uwaterloo.ca

Dr. Ka

This is to confirm the details in your memo.

thanks,

Dr. Ke

Graduate Director
 David R. Cheriton School of Computer Science
 University of Waterloo

On 28 May 2014, at 22:17, [REDACTED] Ka [REDACTED] wrote:

Hi Ke [REDACTED]

sorry, I had meant to sent out this memo earlier.

I have agreed to become Shafique's PhD supervisor (the paperwork is already being completed) on the following conditions:

- As long as Shafique makes appropriate progress in his PhD studies, the school will continue to fund the RA portion of his salary.
- In particular, we plan for Shafique to take his CompII exam early in 2015. [REDACTED] and [REDACTED] have tentatively agreed to be on the CompII committee. This exam is the next milestone in determining appropriate progress and further supervision by me and funding by the school is contingent on the successful and timely completion of the exam.

Please confirm and/or let me know, if I forgot anything.

Thanks,

Dr. Ka

Note:

As per GGRS (Section 2, page ii), UW was obliged to provide supervision and resources to a graduate student as long as the student remains in good standing. It was the main condition imposed by Dr. Ka (my new supervisor) and SCS administration in the above email. The email also informs that I would have to leave if fail to demonstrate sufficient progress in my research despite the fact that Dr. C and Dr. A had wasted three productive years of my PhD studies.

Dr. Ka had already started supervising me after the presentation on May 2, 2014. He decided to have one-on-one weekly research meetings with me. No meeting minutes were ever documented. Behaviour of Dr. Ka was initially confusing and then became frustrating and insulting. From May 2014 till March 2015, Dr. Ka refrained from having research related discussions in emails and everything was limited to one-on-one meetings.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: Problem Description
 Date: September 19, 2014 at 10:19
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

OK, so next time we meet we need to find a level of abstraction to make these consideration comparable to the rest of the performance and resource management world. This includes two important steps:

- What are the actual hardware resources?
- Which of the above do we believe could be a bottleneck under what circumstances?

Note that each system typically only has one bottleneck at each time, because that bottleneck then limits the overall throughput.

Let me know when you want to continue that discussion.

On 19/09/14 03:46 AM, Shafique Muhammad wrote:

Hi Prof. Ka [REDACTED]
 Kindly find load distribution problem description in the PS section.
 We we can meet next to discuss possible and an optimal solutions? I am eagerly pursuing this approach and seeing results as early as possible may be a matter of comfort. All calculations stem from this basic concept.

Regards,
 Shafique

P.S.:
 User provides max number of publishers and subscribers that can join a cluster in a single cycle turn. Since we are not sure that how much load these clients will put on the system, we prefer passing mp (max publishers per cycle turn) and ms (max subscribers per cycle turn). A cluster goes from active/inactive mode when either mp or ms limit is reached. Assume L_p is the load caused by mp then load caused by one publisher is L_p/mp . This is true for all n clusters in the system. The main point of discussion is that how this load is calculated? Some of the elements to be considered in calculation is: rate, load on input/output queues, memory consumption, CPU usage. The tricky part is the load left in each cycle turn which is "oxygen" of this load distribution policy. This load left will be used to cluster similar subscribers when they join a cluster in inactive mode. Another point is extra load caused by load calculation. We should avoid those techniques which put unnecessary load because of load calculation. Anything $\leq 1\%$ may be considered reasonable to follow.

Note:

In initial 11 months of supervision, Dr. Ka did not provide me feedback on my research. All research related discussions were restricted to undocumented one-on-one weekly meetings.

I once tried to discuss a research realted point in email and got the above confusing reply from Dr. Ka, which resulted in sending more emails and receiving more confusing replies.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: Status
 Date: November 5, 2014 at 17:36
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

OK, send me the document when it's available. Remember the CompII is very important to continue with your program and funding.

On 05/11/14 05:05 PM, Shafique Muhammad wrote:

I should be sending you an updated version of the load dist. model document hopefully on Sun/Mod and we can meet after you finish a review. I am waiting to be able to see the results and we should also plan to submit a conference paper. I think we should have enough out of this work to be able to submit a paper.

On Wed, Nov 5, 2014 at 9:07 AM, [REDACTED]@uwaterloo.ca> wrote:

OK, when do you want to meet next? Also, btw, I will be travelling most of December and we need to make plans for your CompII exam...

On 05/11/14 04:40 AM, Shafique Muhammad wrote:

Hi Prof. Ka [REDACTED]

The all three variants of prototype are complete. I will start initial testing of the first variant from this week. I believe that there will be some fixings and modifications as I move on in testing. I read some part of the book which you gave. Few more test cases was documented lately. I could not focus on language learning in last week and have requested a cancellation for this week.

The list of next tasks is:

- 1- load distributed model document; I should be able to send updated version in next week.
- 2- testing of the first variant; I will start with small topologies generated by the utility that I developed. I will move to large topologies once the list of test cases is discussed and final.
- 3- Study of well-cited 12-15 papers on clustering in pub/sub domain to develop more test cases.
- 4- Start documenting new concepts emerged during this study; this will be a formal document and I will start working on this after finishing the first document. I have developed most of the diagrams.

Note:

My focus was to submit a research paper as soon as possible to get reviews as I was not expecting any help from Dr. Ka. I coded my research prototype in Java for evaluation in real environment. After an intense effort of more than 8 months (I am professional Java programmer and C/C++ with more than 10 years development experience), I had developed a prototype based on three variants of my research concepts (precisely called Load Distribution Model). Dr. Ka never provided feedback. Since June 2014, I had been requesting to get access to a cluster hardware to generate results in close-to-real environment before writing the research paper. After writing a research paper, Comp2 exam would be just a formality. However, Dr. Ka and SCS Graduate Director pushed me to write Comp2 document, which results in halting my research activities. As my research was in mature phase (this was what I thought), I decided to write a dummy Comp2 document on a deprecated research idea because I did not want to disclose my unpublished research to the committee members Dr. T and Dr. W. I informed Dr. Ka about this decision. I submitted the first draft of the dummy Comp2 document in December 2014.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca 
 Subject: Initial Results
 Date: February 21, 2015 at 01:04
 To: [REDACTED] Ka [REDACTED] @uwaterloo.ca

Hi Prof. Ka [REDACTED]

Kindly find attached a two pages document that contains initials results of my prototype. These results are generated from cluster-based PS systems without using bipartite approach. I gives me immense confidence to write that it works, and its little more than what I expected! The results were prepared on last Sunday. The testing scenarios that I used are the most unfavored to the architecture that I am developing. I wanted to see the extreme -ve side of results. I used 10 publisher with the same advertisement, message rate 50 per minute and each publisher generated 100 messages. I generated 10-500 subscribers interested in the advertisement. This means each subscriber must get exactly 1000 messages. This preplanned scenario helps also in detecting any broken links or mail-functioning in the overlay network. I detected 2 minor bugs and they were fixed with some effort. I used covering on/off options to see changes in behavior. We will discuss more about this in our next meeting. I used 36 brokers in total and divided them into maximum 9 clusters. The "1-24e-12i" indicates that there is only one cluster (flat topology) with 24 edge and 12 inner brokers, "3-8e-4i" indicates 3 clusters each with 8 edge and 4 inner brokers. I calculated subscription propagation delay, memory used, total generated inter-broker messages, and latency with covering on/off. The results are shown in 8 graphs in the attached document.

The next version of Comp II document is complete and I am doing a final read. The document has gone through many changes. Mainly, I added two more simple examples to discuss my point of view. Few more concepts has been removed and now the total size is reduced to just above 20 pages. I am trying to learn how to write an academic document but its taking time. I could not find time to study virtual networks.

Regards,
 Shafique

Note:

I had generated the initial results from the research prototype. Dr. Ka sent an email to have a meeting to discuss the results. The experiments related metrics (subscription propagation delay, memory used, ... etc) were selected research publications.

Meeting with an SCS Professor:

In February, 2015, a professor of SCS UW informed me that my research had serious flaws as per basic scientific standards. I would not be considered demonstrating sufficient progress in presence of those flaws. The profrssor also prpvided basic guidleines to explore new research topics to fix those flaws. I did not initially believe in that professor because my supervisor had been working in distributed systems for almost 2 decades and the issue that professor mentioned was in my research idea from day one and even in the presentation I did on May 2, 2014, which was attended by Dr. Ka and my committee members Dr. T and Dr. W who were also experts in my research area. However, after exploring the recommended new research topics, I concluded that the porofessor was right. I further understood that my claims about the research improvments in initial results were incorrect. Dr. Ka never corrected me about my research and also did never mention that the results sent to him were also incorrect. I started working on fixing the flaws. In almost 40 days, I was able to fix the research flaws and my focus became more confined (on novel static and dynamic routing algorithms highly desired by social networking systems like Facebook, Twitter, and LinkedIn).

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
Subject: Re: Comp2 Document
Date: February 25, 2015 at 14:53
To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

Sorry, I have to leave I was feeling weak because of flu.
In addition to our discussion today, I still have to describe my understanding and the level of confidence about the improvements that we observe in results. We can discuss this in our next meeting. I am currently focused on regular topologies and distribution techniques.

On Tue, Feb 24, 2015 at 8:20 AM, [REDACTED] Ka [REDACTED]@uwaterloo.ca> wrote:

Sorry, something came up and I would like to take the day off. Can we postpone the meeting until tomorrow 1pm?

Thanks,
[REDACTED]

On 24/02/15 12:05 AM, Shafique Muhammad wrote:

Okay!

Note:

A meeting was held on February 25, 2015 to discuss the initial results. I had poor understanding of how to present scientific results and needed help. I thought that my claims about improvements were endorsed by Dr. Ka because he gave no comments in the meeting (this is also obvious from the above email which was not replied). Just before end of the meeting, Dr. Ka asked a question which required some explanation. I started finding the most suitable explanation (and also contacted other researchers for help) and also kept Dr. Ka updated through emails although he never responded to that discussion.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: Cluster Locking
 Date: February 27, 2015 at 18:23
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

Thanks for the update. I'm kind of getting lost in all those potential research topics. Could you please compile a short list of those that you have identified, so far, so that we can discuss them one by one?

On 27/02/15 06:07 PM, Shafique Muhammad wrote:

Hi Prof. Ka [REDACTED]

I have finished exploring cluster locking scenarios in my work. I should mention that I could not look deep into the topic because of other ongoing research activities. I am putting this thread off for some time to pay more attention on evaluation part. I believe there is a considerable research component available cluster locking in our work which is most likely not explored by anyone (and I think there is reason).

I read some papers on clustering and locking to understand the phenomenon in physical networking and distributed databases but what we are trying to do is quite different. The most interesting part of cluster locking in pub/sub is decoupling which requires special arrangements in overlay networks (I am not providing details to keep this message short). Cluster based locking might have been done before in physical networking but not with decoupling because this property is only specific to pub/sub. Pub/sub uses dynamic interesting clustering and locking is not needed because the context never required this. We have both: clustering with locking + clustering with decoupling.

So far I have collected three scenarios in the subscription-based semantic where I am using cluster locking. I am expecting few more scenarios in the advertisement-based semantic and it will, hopefully, lead to a good good research contribution. I am hoping that once we finish prototypes of both semantics and have results, we can tweak the code to do more experiments for detailed analysis of locking.

Regards,
 Shafique

Note:

In parallel to generating initial results, I started working on another relevant research problem "cluster locking" associated with my PhD research work. I provided initial details to Dr. Ka in a one-on-one meeting and he asked me to explore few more topics (which I did and as usual found them irrelevant to my research). Dr. Ka's reply indicated that I was working on identifying many (too many!) potential research ideas when I was working on only one research problem and "cluster locking" was a part of it. I was unable to understand behaviour of Dr. Ka. I suggested documenting one-on-one meetings using some online documentation tool (google doc, skydrive, etc.) to avoid confusions but he did not reply to my request.

While working with Dr. A, I did not work on multiple research areas/ideas/problems by myself. It was Dr. A who put me into that useless effort before asking to do research presentations on my findings.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: Comp2 Document
Date: March 30, 2015 at 14:45
To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 30/03/15 02:41 PM, Shafique Muhammad wrote:

Can you postpone Tuesday meeting till Friday? I am in mid of generating some more results and hoping to finish before Friday.

Your call. In principle, I would like to better understand the objectives and details of your experiments, but if you are already running them, we can wait until results are available. Then again, we need to make progress with the Comp2 document regardless. Finally, Friday is a holiday and the university is closed, so it'd have to be Thursday - after 3pm for me.

Note:

In parallel to doing efforts for fixing the research flaws identified by the professor (who I met before), I generated more results before writing a research paper. I sent two more results after sending the initial results on February 21, 2015 (page 9) and there was no feedback or discussion. He wrote the above email to let me know that he was unable to understand what I was doing. I was unable to understand what he meant by the email and strongly believed that I must submit a research paper to a conference to get credit of my efforts. This feeling was getting stronger day by day but I did not have access to network cluster (to generate research data for the paper) and I was poor in writing. If the objective of my work was not clear to him, he must have stopped me from wasting my time.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: *Re: Comp2 Document
 Date: April 6, 2015 at 11:38
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 06/04/15 02:30 AM, Shafique Muhammad wrote:

Kindly find attached a revised version of the comp II document. The following are the changes in this update.

- i- all correction as indicated by you has been incorporated.
- ii- the sections that have major changes are: 1.2.2 Architectural Models, 2.4 Pure Forwards, 3 Dynamic Clustering, Intro of Section 4 Proposed Research.
- iii- a new section 4.6 Conclusion is added to to sum up the proposal while 2.5.2. DHT-based and Broker-based Systems has been removed.

The chances sound good, but at this point, I am not doing another detailed review of the document. Please contact the grad office to initiate the next steps for your Comp2 exam.

The main thing that you could change to substantially improve the document would be giving more/better/easier intuition early on in Chapter 4, why and how your basic grouping idea would improve performance.

I have gone through the paper (that I sent in last email) a number of times and my understanding is that dynamic routing in cyclic topologies is not possible when the system is subscription-based. The paper however uses an advertisement-based approach. However, the approach that I am developing supports dynamic routing. We need to discuss this further to make sure that I am not misunderstanding something important.

OK, I'll take a quick look later today, but then I would like to roll this into the overall discussion of research questions. I believe you still owe me a list of current topics that you are looking at?

As the evaluation is in final stage now, I will be sending you complete results before the end of this week. I have implemented static routing and currently working on dynamic routing. Just to mention it, we do not have any topology justification issue as all work in being done on cyclic topologies. Kindly send me CCRI identifier soon to be able to create an account on SciNet.

Note:

I sent the updated dummy Comp2 document to Dr. Ka on April 6, 2015, and received his reply (mentioned above). Dr. Ka always provided partial comments about my Comp2 document. Section 4 of the dummy Comp2 document was about the main reserch idea that I was required to defend. He mentioned "the main thing", which could substantially impotve the dummy Comp2 document, in a partial review provided on April 2, 2015, and then refused to review the dummy Comp2 document. He then asked to send the document to the committee memebtrs without reviewing that how I added the "the main thing" in the dummy Comp2 document.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: Comp2 Document
Date: April 6, 2015 at 15:30
To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 06/04/15 03:15 PM, Shafique Muhammad wrote:

There are just few paragraph which should not be time consuming to read. The list includes: introductory paragraph of section 4 the proposed research, section 4.6 Conclusion (just two paragraphs). You may also find Section 3 quite improved. I can stop by some time to request for an instantaneous feedback on these paragraphs.

I'm reluctant to give you any other feedback than asking for additions to Section 4 that would better motivate and/or illustrative quantitatively the expected benefits from grouping.

I have talked to [REDACTED] and she says that the next thing is to talk to committee members to finalize the date of comp II defense.

OK, I will inquire with [REDACTED] and [REDACTED] about the genera availability. What timeline do you have in mind?

Note:

I was unaware that UW had policies and guidelines to run its business. I was unable to understand another reply of Dr. Ka and was confident that Comp2 was just a formality which I would meet easily. Despite my multiple reuquests, Dr. Ka refused to provide "the main" feedback after mentioning for the first time that "the main thing" was not done to improve the dummy Comp2 document. Dr. Ka mentioned adding expected benefits of "grouping" quatitatively. As mentioned above, the dummy Comp2 document was not about my research. The dummy research idea presented in the Comp2 document was not about "grouping". My research was about "grouping" and all the results sent to Dr. Ka previous (and he provided no feedback) was about "gropuing". The dummy Comp2 document was about an entirely different and deprecated research idea called "Subgrouping" and the expected benefits had been outlined in the document. Why Dr. Ka correlated my research with the dummy Comp2 document? The committee members could ask questions related to the Comp2 document becuae it was part of the Comp2 exam. They could not ask questions about my research because it was not part of the Comp2 exam. Then how the committee members would find that whether I made sufficient/insufficient progress?

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Shafique's Comp 2 exam
 Date: April 6, 2015 at 17:21
 To: [REDACTED]
 Cc: Shafique Muhammad muhammad.shafique@uwaterloo.ca

I would like to schedule Shafique's Comp 2 exam for June 5th, 1:30pm.
 Would that work for everyone?

Thanks,
 [REDACTED]

Note:

On April 6, 2015, my Comp2 exam was scheduled for June 5, 2015. Dr. Ka did not review my Comp2 document after mentioning the "main contributions" that could be made to substantially improve the dummy Comp2 document. The document was passed on to the committee members. He then sent the following separate email on April 6, 2015:

*"then again, as soon as we are done with **talking** about the Comp2 document, I want to get an overview of the various research ideas that you are currently pursuing. It seems there is a lot (too much?) going on at the same time..."*

Till this point, Dr. Ka did not discuss my research in emails and everything was buried to undocumented one-on-one meetings. He never provided feedback about a research document sent to him before December 2014. He had already mentioned that the dummy Comp2 document was about "grouping" and there was no feedback about the results sent to him other than mentioning that he did not understand my research and results (the email on page 12). I had no access to the cluster hardware and therefore could not write and submit a research paper by my own. I needed access to the hardware to improve my research by myself. My research idea was flawed and it was almost impossible to achieve "sufficient progress" mark to continue my PhD at the University.

In his email above, he mentioned that so far we had only talks about the dummy Comp2 document and I was working on many research ideas in parallel which he was unable to understand. This also meant that I was working on multiple research ideas without informing him.

Excluding the Comp2 document, if Dr. A would say the same thing (that I worked in multiple research areas without informing him), then I was at fault in my first student-supervisor relationship and blamed Dr. A in my complaint to SCS administration in April 2014. The complaint about the research project was not documented by the university. I was knowingly fighting with a much more powerful and informed adversary. The Comp2 document had been locked because Dr. Ka had refused to provide any further feedback and the exam date had been announced.

The Difference of Knowing

Till this time, I was not aware that Dr. A was not my supervisor and was not eligible to supervise me. I was unaware that UW had policies and guidelines that everyone has to follow. I did not know that my complaint about the unseen research project was a very serious issue. I did not know that UW did not follow its own policies and guidelines in handling my complaint. I did not know that Dr. Ka and my committee was planted by UW to cover up the financial scandal. I did not know that insulting attitude of Dr. Ka in one-on-one undocumented meetings was not without a purpose. I had to finish my PhD to secure future of my children because I had invested my career into it.

On the other side UW knew realities, and ins-and-outs of my complaint. It had resources, power, influence and privilege. It knew and used numerous ways to put pressure on me to disturb my mental and physical health. It knew that I could be asked to leave the PhD program only if I would be in bad standing without sufficient research progress. UW knew I was not aware of policies and guidelines. So, overall, the University found situation in its favour.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: The Paper
 Date: April 8, 2015 at 16:27
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

Hi Prof. Ka [REDACTED]

Here is the information about the paper.

Title: Adaptive Content-Based Routing in General Overlay Topologies

Link: <http://link.springer.com/chapter/10.1007%2F978-3-540-89856-6>

The paper describes issues associated with content-based routing in systems that use cyclic (general) topology. The presented approach uses a so called Tree ID (TID) to identify interested subscribers connected to the cyclic overlay network. TIDs of interested subscribers are used to send a publication to interested subscribers to avoid cyclic. Although the paper has 69 citation but there is almost no improvement in this aspect of PS due to the following reason.

I've scanned the paper and I believe I basically understand what they are doing.

i- There is no control on the length of the tree path (shortest tree paths are simply not possible) due to cyclic. -- see the paper for details.

I see your point. There are a couple of simple solutions that are used in IP Multicast routing that seem like they could be applicable here. We should discuss those.

ii- If a publication matches with a large number of subscriptions, the message payload increases due to embedding a large number of TIDs. -- this is not mentioned in the paper.

It seems (bottom of page 7) that each publication carries only one TID (from the associated advertisement).

i- A new class of clustered-based cyclic topologies. These topologies are not ad-hoc but generated systematically after deciding connectivity and cluster-size requirements (never done in PS before). I use the concept of Cartesian product of graphs for this purpose which is never used before in PS systems.
 ii- I have developed a routing approach that uses shortest path tree.
 iii- Multi-cluster routing algorithm.

OK, how do you plan to compare your solution to the one from the paper?

I am currently working on dynamic routing aspect. I will be using the same link utilization formula as described on page 9 of the paper. Since the paper is old, a similar advanced concept from queueing theory may be helpful to have a better estimation of the overlay link utilization. I am hoping to implement dynamic routing in next 7-10

The metric in the paper is simple, but not necessarily wrong. Queueing theory is a mature subject, things don't change so much in a few years.

days. I have already implement static routing approach and a comparison with the old approach indicates that our approach is much better than the old one.

So above. Please define "better" and then let's talk about this.

Note:

The Comp2 (proposal) document had been finalized and closed on April 6, 2015. I had eliminated flaws from my research and was working on generating data to write a research paper and I needed help. Similar to proposing new irrelevant topic in the past, Dr. Ka proposed another topic "IP Multicasting" which had already been explored and discussed. It was found irrelevant to my research. Dr. Ka had been told in the last meeting that comparison with state of the art was not possible as the problem had no prior solution. However, he still demanded that the comparison should be done.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: The Paper
 Date: April 9, 2015 at 08:11
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

Apparently IP Multicast approach is not considered feasible because of either the system will have to manage a large number of groups or bear false positives. We can talk further on this.

Just because IP Multicast is not suitable as a whole doesn't preclude individual mechanisms from being useful. **This attitude of summarily dismissing other work is not helpful.**

- Yes, each publication should be padded with only one TID. But this may not be the case in a subscription-based system where each publication may have a large number of interested subscribers and eventually will require each subscription TID (there is no TID for advertisements in this) embedded in the publication itself.

OK, but no are comparing to not the mechanism from the paper, but to a strawman derived from the paper.

- I can't directly compare my solution with the approach described in the paper (this is the next prototype that I will start once I finish the sub-based PS work) because their approach is for adv-based and my work is for sub-based PS systems. However, using TID approach in a sub-based system for general overlays, and using my approach for general overlays, we can do a comparison. I have developed a sub-based PS prototype that uses TID with static routing. It seems that dynamic routing is not possible in TID-based sub-based PS systems. This is because in adv-based system, overlapping paths are used for dynamic routing but there is on path overlapping in a sub-based PS system because there are no advertisements.

This is a a problem. At some level (overall resource utilization & performance), systems must be comparable somehow.

- I have finished static routing in my prototype and currently working on dynamic routing. I will use same topology with same number of subscribers, and publishers with their rates. The only difference in my work in defining cluster hierarchy in cyclic topology and the topology is well structured and generated through Cartesian product of graphs.

Before delving into implementing and testing prototypes, I strongly recommend attaining a bigger-picture understanding of what it is that you are actually trying to do and again: How to declare victory?

After finalizing the Comp2 document and exam, Dr. Ka's harsh attitude, which was limited to meetings before, started appearing in emails ("this attitude..."). I had developed the first solution of a two decades old reserch problem and was working on initial verification. Dr. Ka had only knowledge of my old research which had serious flaws and would result in failing the Comp2 exam. I have claimed a number of novelities in my updated research and it was important to discuss them in emails but there were no words from Dr. Ka. Instead, he demanded that comparison with the state of the art which was not legitimate.

The last paragraph was hard for me to undersand. It says that I was doing some programming and testing without research problem. I was not working on some genuine research problem and wasting my time (and resources of the University) in useless activities. The context of the paragraph showed that my supervisor, Dr. Ka, had already informed me on similar lines. An important point to consider here is that the paragraph was written after I had submitted multiple results and Dr. Ka apparently provided no feedback. I claimed improvements and Dr. Ka called a meeting in which he was completely silent about my research claims. The research idea I pursued for almost a year had serious research flaws.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
 Subject: Status
 Date: April 14, 2015 at 01:24
 To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

SM

Hi Prof. Ka [REDACTED]

Kindly find attach few more results that I generated after running a new cycle of evaluation last week. I used only one cyclic topology of 9 brokers with 3 clusters and try to compare my approach (tagged as New) with the existing approach (tagged as Old). I outlines details of results and my plan for the paper in the following. I could not spend much time on graph topology document in last few days due to busy TA schedule.

In my effort of having a justified comparison between existing and my research, I decided to switch to cyclic topologies. I was more focused on acyclic work before because there is plethora of information already published. The paper that we both studied clearly describes the limitations and challenges.

(i) tree identification is required to avoid cycles, (ii) dynamic routing is only possible when there is an overlap between routes of publishers of interest. (iii) tree length is not predictable. etc. They did not work on subscription-based PS systems with cyclic topology. Subscriptions in a sub-based PS system flood in the same way as advertisements in an adv-based PS system. Since there is no advertisement in sub-based PS systems so there is no notion of overlapping trees (due to advertisement). No subscription can overlap with other subscriptions because they all have distinct spanning trees. This also means that dynamic routing is not possible in sub-based systems until some other non-conventional approach is introduced (e.g. moving clients from heavy loaded brokers to less loaded brokers, this approach is followed by many PS systems that use acyclic topology). When publisher sends an event to notification infrastructure, the publisher hosting broker has to embed TIDs of all the interested subscriber in the message itself otherwise cycles are generated (we can discuss this further in our meeting). This increases payload of a publication when many subscribers are interested in publication from a particular publisher.

What I wan to present in the paper?

(i) the paper will provide a little details, issues, some experimental results of using TID-based approach in a sub-based PS system. The purpose of this part is to introduce reader about the limitations of TID-based approach in handling cycles. (ii) the paper will include a detailed description of the class of topologies that I am going to introduce with benefits and limitation. (iii) clustering and messaging in proposed class of topologies. (iv) static routing in proposed class of cyclic topologies. (v) bit vector based dynamic routing in the proposed class of topologies.

My approach does not require TID to be embedded in the publications, it provides an algorithm to generate spanning trees of minimum length, it always supports dynamic routing, and it comparatively saves less information in the overlay routing tables. The topology designer should also be able to decide topology related constructs to control fault-tolerance and failure recovery. In summary, the paper will compare existing static routing in cyclic topologies with proposed static routing in cluster-based cyclic topologies (no added link or broker), then both static routing approaches will be compared with the proposed dynamic routing.

The results in attached document contains a comparison between old/existing and new static routing approaches. The document indicates a large difference in publication delay (Figure 1), Subscription Delay (Figure 2), etc. when existing static approach is compared with new static routing approach. The proposed approach is however slow in matching when compared with existing approach (Figure 4). Figure 5

matching when compared with existing approach (Figure 4). Figure 5 indicates that the proposed approach generates less number of inter-broker messages because it generates spanning trees of minimum length. Figure 3 indicates that the proposed approach saves less memory in routing tables.

I finished dynamic approach yesterday but only able to do some initial evaluation. I don't want to spend more time on evaluation on a standalone machine when the research approach is already verified. I spent some time on exploring SciNet vs. SHARCNET and found SHARCNET more suitable for few reasons. I don't need much resources as my work is not related to HSC. Documentation of SHARCNET is much better than the SciNet and the pool of tools for SHARCNET is bigger than the SciNet. SciNet still uses an old JDK. UW has a SHARCNET technical resource available on campus and we can request an account on SHARCNET from our existing account. I have initiated a request for an account on SHARCNET.

Lets have a detailed discussion in our next meeting. I want to make sure I don't misunderstand something, questions always help. We will discuss evaluation strategy after 24 April. Hopefully by then I will be having some documents ready.

Regards,
Shafique



clusters_3_2e_1i
_results.pdf

Note:

By following the guidelines of the professor (who I met in February 2015), I was able to eliminate the research flaws and developed a new topology (a new theory) called Structured Cyclic Topologies for Overlay Network (SCTON). SCTON made static and dynamic content-based routing (using cyclic topologies) in applications like Facebook, Twitter, and LinkedIn possible. I sent the initial results in the above email to Dr. Ka. I made a number of novelty claims supported by the attached results. I had done initial testing. I also provided outline of the paper that I was ready to start writing. Notes were ready, results had been generated, diagrams had been finalized and ready to be sent to Dr. Ka for his approval. The Comp2 exam was almost two months away. The only thing which I could not do was evaluation in real environment and for that I needed access to a network cluster which required approval from my supervisor. It was important to discuss each claim and result because these claims, if found valid, were enough to claim a PhD. And for documentation to guide me further, the discussion should have been done in emails. However, Dr. Ka did not reply.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: Account on SHARCNET
Date: April 16, 2015 at 16:19
To: Shafique Muhammad m5shafiq@uwaterloo.ca

I see. So SciNet isn't useful?

Then again, as we have begun to discuss yesterday, I have some doubts whether this massive experimentation is a good way to evaluate your ideas - without having some abstract and systematic way of formulating quantitatively the expected benefits of your ideas.

On 16/04/15 04:13 PM, Shafique Muhammad wrote:

I asked this question to [REDACTED] and he says that we don't allow this. He says that we don't allow users to see where the job is running (no machine information for outsiders). User submits a job to a scheduler and scheduler selects one/multiple nodes to execute the job. He however said that there are some other high-end machines available but the user has to get approval and access from SHARCNET tech management to be able to access them. He sent an email to his manager and it seems from his talk that it will take some time. Meanwhile, I talked to Lawrence to see the possibility of having access to some local on campus facility. He seemed bit busy yesterday and today.

Note:

Dr. Ka did not reply my email on page 18-19, and sent the above separate email as his reply. Clear research related communication with a student is extremely important to help him/her understand questions and concerns. Dr. Ka had maintained a pattern of keeping things blurred in emails (as he did in the above email) with confusing and demoralizing discussions in one-on-one meetings. It was important to provide details of those important "doubts" to help me struggle to improve my research. I was unable to understand the last part "without having some abstract and systematic way of formulating quantitatively the expected benefits of your ideas." due to my poor understanding. All the four results sent to Dr. Ka were not discussed quantitatively. I had been waiting for the required hardware to generate more realistic data for results calculation. In principle, Dr. Ka would have asked and educated me about the discussion using any quantitative representations he wanted. This would allow me to correct the data representation from day one. However, he did not do that and sent the email on page 12. Quantitative representation of the benefits or improvements are normally done when a research approach is compared with some state of the art. However, the results sent on April 14, 2015, (with the email on pages 18-19) were not compared against some state of the art as no state of the art existed (or ever mentioned by my supervisor). Again, in principle, he should have asked me to resend him the results with the format of representation he wanted but he did not do so from the beginning.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: Account on SHARCNET
Date: April 16, 2015 at 18:05
To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 16/04/15 06:01 PM, Shafique Muhammad wrote:

I have an evaluation plan with different related scenarios that should be evaluation to show tradeoffs. I just talked to [REDACTED] and he may get us something better but available in different time slots. He says that he has a machine available with 2TB memory that I can use. But I don't know the demerits of deploying a complete topology on single machine. I have asked this to people working in pub/sub area and waiting for their reply.

You really need to stop focusing exclusively on "people working the pub/sub area".

Let me know, if you want to discuss the your evaluation plan.

Note:

The issue of getting access to cluster network was running in parallel. Dr. Ka asked me to prepare an evaluation plan before providing access (he did not ask for such a plan when I generated initial results back in February 2015). Dr. Ka was pushing me to use a single machine for evaluation. I did not know demerits and tried to learn from other researchers, and received the above reply from Dr. Ka.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
Subject: Topology
Date: April 30, 2015 at 04:56
To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

SM

Hi Prof. Ka [REDACTED]

Kindly find attached the topology document. It pretty much contains everything that is needed for the current task. I haven't composed information about fault-tolerance because it is not needed at the moment. The document has enough to discuss with prof. [REDACTED] and work on fault-tolerance should start after getting feedback from her. Let me know when you want to discuss this further.

Regards,
Shafique



SCTON_v1.0.pdf

Note:

The scholarly writing on SCTON was sent to Dr. Ka for an academic evaluation. The document was the first formal partial description of my research after fixing the research flaws identified by the professor (who I met with in February 2015). SCTON was a structure for smooth flow of network traffic, which made static and dynamic routing possible. This novelty was missing in social networking application e.g. Facebook, Twitter, etc. and was an important open research problem.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: Topology
Date: April 30, 2015 at 16:06
To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 30/04/15 04:56 AM, Shafique Muhammad wrote:

Hi Prof. Ka [REDACTED]
Kindly find attached the topology document. It pretty much contains everything that is needed for the current task. I haven't composed information about fault-tolerance because it is not needed at the moment. The document has enough to discuss with prof. [REDACTED] and work on fault-tolerance should start after getting feedback from her. Let me know when you want to discuss this further.

I did a quick scan and the document looks good in that it uses solid mathematical language to lay out the structure of the topologies that you are interested in. I need to read it much more carefully to get all the details.

However, before I commit to that effort, I'd like to know whether you have made any progress towards illustrating the tangible benefits of building virtual topologies in this way?

Thanks,
[REDACTED]

Note:

The first paragraph shows how Dr. Ka was apparently evaluating my work since the beginning of the supervision. After knowing about SCTON (which eliminated the research flaws), he replaced the phrase of "abstract and systematic way of formulating your ideas" with "illustrating tangible benefits of building virtual topologies in this way?". Both were equally confusing and difficult to undersand. The email on April 14, 2015, clearly indicated benefits of SCTON. Many of the claims were clearly "tangible" being achieved for the first time. In none of the previous emails Dr. Ka asked for the benefits of SCTON and no third person knew what he used to discuss in one-on-one meetings. I had no idea what was going on. Tangible benefits of using SCTON was the support of dynamic and static routing which were never supported before. Professor Dr. Ka had more than two decade experience in networking applications. He concluded that SCTON was useless because he could not see any tangible benefits of it. My research on SCTON, static and dyanmic routing had no relation with the dummy Comp2 document which I wrote to fulfill a formality and hide my research from the committee members. After receiving the document, Dr. Ka's behaviour in meetings became more aggressive, taunting, and disturbing, which I was unable to undersand. I had no other options except to continue to save future of my family.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: Topology
 Date: April 30, 2015 at 18:51
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

We are going in circles again:

I ask how you would illustrate the tangible benefits of building virtual topologies using SCTON?

-> You point to your results from Apr 14.

I try to understand the exact nature of these results, which culminates in asking for a simple & precise description of "Old" and "New", since those are shown in the graphs from Apr 14.

-> You tell me "Old has been removed"

This is like nailing pudding to the wall...

On 30/04/15 06:08 PM, Shafique Muhammad wrote:

Old has been removed as it was hard to compare the results. Now everything is based on the structured topology concept described in the document.

The old topology was similar to a book graph:

<http://mathworld.wolfram.com/BookGraph.html>

And it can introduce hotspots in the main joining clusters (although I have developed techniques to avoid this). Old approach is also cyclic topologies but the new refined approach is way better for the

Does this sentence mean that "Old" in the graphs from Apr 14 was also a cycle topology?

So we are back to my original request: Produce a simple example to illustrate the tangible benefits of building overlay topologies your way - compared to some defensible "state of the art".

Thanks,
 [REDACTED]

Note:

"Old" and "New" had been explained in the email sent on April 14, 2015, and more details could be provided. Dr. Ka was demanding comparison with state of the art when no state of the art existed or pointed out by him. He did not demand comparison with state of the art when I sent him initial results generated in February 2015 from a research prototype based on flawed research idea. I had been discussing that research idea with him for more than 10 months in one-on-one meetings.

In no previous email Dr. Ka demanded an example. How a research can provide an example of comparison with state of the art when no state of the art existed. Dr. Ka started taking only about virtual topologies (i.e., SCTON) but no words static and dynamic routing which was more novel part of my research. If he would talk about static and dynamic routing, he would not have to ask about showing the "tangible benefits" as the static and dynamic routing algorithms were the major research contribution that I made.

Having claim of supporting dynamic routing was a ground breaking research, which systems like Facebook and LinkedIn did not support. Novelty claims and tangible benefits were there in the results sent to him, which proved that my algorithms would make a significant research contribution but he never acknowledged.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: Evaluation Document
 Date: May 4, 2015 at 16:54
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

This is a fundamental matter that is not subject to discussion: You must compare your proposal with existing technology.

As a metaphor: If I am proposing to use a personal hovercraft to drive around in a city, it is not sufficient to just compare it with big maritime hovercrafts and claim a small one is so much more versatile and efficient. I will also have to compare it walking, bikes, public transit, cars, etc...

On 04/05/15 04:37 PM, Shafique Muhammad wrote:

I am not ignoring, just trying to understand. As I wrote previously, lets discuss this in meeting.

On Mon, May 4, 2015 at 4:26 PM, [REDACTED] Ka [REDACTED]@uwaterloo.ca> wrote:

I don't know what to say. Please reread my last sentence below. If you keep ignoring it, I'll give up.

On 04/05/15 04:15 PM, Shafique Muhammad wrote:

To the best of my knowing, there is no content-based PS system that uses subscription-based routing in cyclic overlays. The bottleneck is the routing tree identifications (TID) that has to be embedded in each message and is not considered feasible. There are some other unaddressed issues in this context, especially for dynamic routing. I have developed some routing algorithms that I want to use with SCTON. The major concern is the evaluation of my routing algorithms, and a modified TID algorithm. However, I am not intending to compare TID with other routing algorithms that I have developed, only using it to show how it will behaves in SCTON. The original version of TID was developed for advertisement-based PS system and cannot be used as it in subscription-based system, a modification is required.

On Mon, May 4, 2015 at 3:53 PM, [REDACTED] Ka [REDACTED]@uwaterloo.ca> wrote:

The only start of the art available for comparison is the paper on adaptive routing in general overlay that you also read.

No. For example, Microsoft has a running system. You need to convince people that your system would be better.

Note:

Dr. Ka spent more than 4 months in reviewing the dummy Comp2 document but never demanded a comparison with state of the art. Although my research was not part of the dummy Comp2 document however unknowingly I was wasting time by working on radiculously flawed research idea. I fixed the research flaws and innovated SCTON, static & dynamic routings, etc..., which had no relation with the proposal exam.

In the first paragraph of the above email, Dr. Ka correlated my research with the proposal exam. Since my research had no relation with the proposal exam, the committee members could not asked me questions about my research. Their comments could not be used to conclude whether I made sufficient or insufficient research progress.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: [UW-MFCF #94988]
Date: May 6, 2015 at 21:42
To: Shafique Muhammad m5shafiq@uwaterloo.ca

No worries, I needed to talk to [REDACTED] first anyway. I hope your son is better soon!

I think people were a little spooked by your request for 18 months. Given that apparently there is no spare computing capacity that can be accessed easily, we need to discuss experiments in more detail first. However, I would prefer to do that after I have seen the simple example that we talked about yesterday, so let me know how that is coming along.

Thanks,
[REDACTED]

Note:

The above email was part of the efforts that I was doing to get access to the required cluster hardware to evaluate my results before writing the research paper. I initially requested to on/off access for 18 months hoping that I would finish my PhD in that time. Dr. Ka asked to produce the illogical example (comparison with state of the art to show tangible benefits) to get access to the hardware while he had been told repeatedly that such example could not be produced. I also informed him that I was working using SCTON, static, and dynamic routing in different semantics where comparison with state of the art would be done. It might be hard to imagine mental distress that I was facing due to behaviour of my supervisor but I have to move on in my efforts to save my future.

I produced two technical reports of my research work (and more were possible). One was written and made public in December 2015 and the second was made public in April 2016. A comparison with state of the art was done in my second technical report where my solution proved to be far better than the state of the art.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: [UW-MFCF #94988]
Date: May 7, 2015 at 14:24
To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 07/05/15 02:17 PM, Shafique Muhammad wrote:

I am just trying to make sure that I don't miss anything important.

Your most important objective is to convince me (and others) that your work on overlay topologies makes sense. Demonstrate your intuition with a simple example.

Note:

After the email about correlating my research with the dummy Comp2 document, this was the next email from my supervisor Dr. Ka. By "others" Dr. Ka meant the two committee members, Dr. T and Dr. B, who could ask questions related to the dummy Comp2 document, which had nothing about the virtual topologies (or SCTON). I did not know that sharing SCTON scholarly writing (sent with the email on April 30, 2015 page 22) with the committee members would be a breach of UW Intellectual Property Policy 73. However, I did know that SCTON details must not be shared with the committee members. I did not have proper understanding of the situation and was under extreme pressure when Dr. Ka consistently asked me to produce the example to get access to the required cluster hardware.

Dr. Ka never talked about static and dynamic routing algorithms because they showed tangible benefits of using SCTON for social networking systems like Facebook, Twitter, etc.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
 Subject: Re: [UW-MFCF #94988]
 Date: May 8, 2015 at 16:16
 To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

I have to mention this that there is a prerequisite to discuss any example related to cyclic topologies in my area. I requested you to study few (less than 7) selected papers to get introduced to my area but our discussion shows they are not studied. Same questions reappear with different semantics. Your last question is already answered in the paper that I requested you to study last month. A discussion without studying the paper will put us in, most likely, fruitless discussion. It has happened before.

The issue is that my work is related to highly expressive content-based overlay networks and the question that you ask most of the time have background in your area. I have to look around to find a justification which does not help me in my research and further adds to my frustration. I can understand that you are busy with administrative work and you have other students as well but my situation is really grim. I have strong feeling that I am being taken for granted. I don't blame to any one, but in my case a good publication is extremely important to save myself from further humiliation at the school. That is why I started working on a document which could provide you written explanation of the current issues that I have already tackled and putting things on the paper will help me in writing a publication. At the same time, I am waiting for the last more than a month now to get some suitable hardware to do wide scale evaluation of my first complete prototype. I am sure that it will take some time as I never did this kind of testing before and there may be some issues as well. I have missed all important conference deadlines which means I won't get feedback until the end of this year. I was at ZERO when you accepted my request to supervise me. I literally worked for 70-80 hours per week to establish my self in this area but I don't have any feedback from top reviewers. I can assure you that this is one side of my situation while other may be less relevant here.

Note:

This email is an outline of my understanding of the situation at that time. I had been recommending research literature for him to study thinking that he needed that. After first initial meetings, I had learnt that Dr. Ka would not help me in research for the reasons mentioned in the email. I had requested Dr. Ka to engage some other faculty member from SCS in my research because expertise were available. I also identified researchers around the world who were willing to help. There was no answer from Dr. Ka. I could not access to network cluster to evaluate my research to write a paper. On top of that, Dr. Ka's illogical demand of producing the example to show the tangible benefits was not understandable. I was able to see that he correlated my research with the irrelevant Comp2 exam but never understood the objectives and never protested and even mentioned to avoid getting more disturbing emails from him and insulting attitude in one-on-one meetings. He always proved to be an obstacle in my learning and moving forward towards finishing my PhD. I could not afford having a conflict with him because of what Dr. A and Dr. C had done to me. It was an element of comfort for me that I had a supervisor and was getting some help from other researchers. However, not having access to cluster network was a major issue and I did not have a solution. I had tried everything in the last 12 months but unsuccessful. Due to attitude of Dr. Ka, my blood pressure started going up in stressful situations. In extreme mental pressure, I wrote the above email to describe my situation. And I believe it would have not surprised Dr. Ka.

From: [REDACTED] Ka [REDACTED] @uwaterloo.ca
 Subject: Re: [UW-MFCF #94988]
 Date: May 8, 2015 at 16:43
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 08/05/15 04:16 PM, Shafique Muhammad wrote:

I have to mention this that there is a prerequisite to discuss any example related to cyclic topologies in my area. I requested you to study few (less than 7) selected papers to get introduced to my area but our discussion shows they are not studied. Same questions reappear with different semantics. Your last question is already answered in the paper that I requested you to study last month. A discussion without studying the paper will put us in, most likely, fruitless discussion. It has happened before.

If you feel that 7 papers (or even a single one) would be necessary, then we are not on the same page about describing a simple example. And I don't know right now how I could explain this in any more simple and plain terms...

Coincidentally, I have discussed your Comp2 document with [REDACTED] T [REDACTED] today and he independently arrived at the very same doubts that I have about the benefits of a structured overlay. He agreed that a simple *concrete* example would go a long way towards convincing us that your ideas are sound. On the other hand, the absence of such a simple example is a real red flag!

You have to accept that we are both experienced researchers (him obviously even more than I) and that our opinions in this regard are relevant and important - regardless of our specific expertise in pub/sub networks.

The issue is that my work is related to highly expressive content-based overlay networks and the question that you ask most of the time have background in your area. I have to look around to find a justification which does not help me in my research and further adds to my frustration. I can understand that you are busy with administrative work and you have other students as well but my situation is really grim. I have strong feeling that I am being taken for granted. I don't blame to any one, but in my case a good publication is extremely important to save myself from further humiliation at the school. That is why I started working on a document which could provide you written explanation of the current issues that I have already tackled and putting things on the paper will help me in writing a publication. At the same time, I am waiting for the last more than a month now to get some suitable hardware to do wide scale evaluation of my first complete prototype. I am sure that it will take some time as I never did this kind of testing before and there may be some issues as well. I have missed all important conference deadlines which means I won't get feedback until the end of this year. I was at ZERO when you accepted my request to supervise me. I literally worked for 70-80 hours per week to establish my self in this area but I don't have any feedback from top reviewers. I can assure you that this is one side of my situation while other may be less

I relevant here.

I am sorry that this process is difficult for you, but I have requested a simple example for a long time, so we could have solved this a long time ago.

I have been a very successful professional but I am becoming a failing researcher.

I think this depends on your ability to accept feedback and make a stronger effort to connect your ideas to the world view of others. So far, you have essentially dismissed feedback that didn't fit your view.

I am happy to go along with this for a little further while. We can do your Comp2 and I'd be happy if you would submit a paper. In fact, I'd be happy to be proven wrong, if you managed to publish a strong paper in a strong venue, but I am very skeptical about this.

Instead, I am fairly certain that if you do not attain the ability to present your ideas in a way that a typical experienced researcher in distributed systems finds them plausible, then your research efforts are eventually doomed.

Best,

Note:

I was in a helpless situation and did not know motives of Dr. Ka and UW. I innovated SCTON/Virtual Topologies/Structured overlays to support static and dynamic routing which was never done before. Dr. Ka consistently demanding an example which could not be provided. Static and dynamic routing aspects were enough to prove the benefits but he was unable to understand. The overall impression given by this and the few previous emails and "the real red flag" was about the upcoming Comp2 exam. As the Comp2 document had nothing on "structured overlay", which meant that Dr. Ka shared my scholarly writing about SCTON with Dr. T who was my committee member. Dr. Ka had admitted breach of UW IP Policy 73 but I was unaware as I was not informed of policies and guidelines.

Dr. Ka mentioned that the simple illogical example was extremely important to avoid the "real red flag" in the proposal exam while I was confident that I would have zero difficulty in passing the exam.

From: [REDACTED] K [REDACTED] @uwaterloo.ca
 Subject: Re: [UW-MFCF #94988]
 Date: May 12, 2015 at 08:27
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 12/05/15 12:48 AM, Shafique Muhammad wrote:

| Kindly find attached a document that provides an example of my work.

That's not the example I was looking for. We need to meet to discuss.

| I believe that Comp II document has noting on the use of structured topologies in a PS systems and if you have shared SCTON document with prof [REDACTED] I must say please don't share these documents with any one, not even with committee members. I know many students that are sneaking for the ideas to complete their PhDs. I appreciate your understanding my situation.

The fundamental problem has nothing to do with SCTON [REDACTED] only read the Comp2 document to realize the problems. You need to work on your attitude.

Note:

In the above another insulting email, Dr. Ka refused to accept the breach although I knew nothing about IP breach and thought that the matter was of ethical nature.

Section 3 of UW IP Policy 73 : STATEMENT OF PRINCIPLES

It is University policy that ownership of rights in IP created in the course of teaching and research activities belong to the creator....

All contributors to scholarly works should receive appropriate recognition for their contributions. Depending on the nature of a contribution, appropriate recognition can take, but not limited to, one or more of the following forms: recognition as a creator, recognition through an acknowledgement or citation.

The Scholarly Work in UW Policy 73 is defined as: A work eligible for intellectual property protection under Canadian and/or international law which is created in the course of teaching, **learning or research at the University**. A list of scholarly works would include, but not necessarily be limited to: **student work submitted for academic evaluation**, research reports, papers prepared for publication, books, computer programs, detailed assignments, work of art, experimental data, and other academic databases.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: [UW-MFCF #94988]
 Date: May 12, 2015 at 13:04
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 12/05/15 08:26 AM, [REDACTED] Ka [REDACTED] wrote:

On 12/05/15 12:48 AM, Shafique Muhammad wrote:

Kindly find attached a document that provides an example of my work.

That's not the example I was looking for. We need to meet to discuss.

Just to clarify: A useful example starts with a real (physical) topology that is plausible. Let me try to explain from another angle:

Traditional pub/sub approaches build overlays and don't study overlay/underlay topology a lot. This is fine, because their overlay topology is mostly a subgraph of the underlay network.

However, your (structured) overlay topology is a supergraph of the underlay network (and certainly a supergraph of the comparable traditional pub/sub topology), so you need to start from there and explain how your system can be faster / more efficient than a traditional overlay without using additional physical resources. The same challenge also applies to your evaluation.

This was the central concern that people remarked on last year when you gave a presentation. I also kept pointing at it. However, you have not addressed it yet. In contrast, any example or evaluation that starts from a structured topology is useless at this point.

Note:

Dr. Ka refused to accept IP breach. He implicitly mentioned in the above email that SCTON was part of the presentation held on May 2, 2014. He had been told repeatedly that SCTON was the first structure that supported dynamic routing (and multiple other novelties) which was never achieved before then how a "traditional overlay" approaches could be compared with my research when they did not support similar algorithm and features (that is no state of the art existed...)? Again, no comment about the most novel part of my research: static and dynamic routing...

If the example was so important (which was the central concern of the people about a year ago in my presentation and he also had been pointing about it) then why he took more than a year to mention that in an email. Multiple results had been submitted and he never mentioned that important concern in an email?

A very genuine point, the real red flag for me proposal exam, was the research flaws that I had successfully removed from my research. A big thanks to the SCS professor who identified them and guided me to eliminate them to improve my research.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
Subject: Re: [UW-MFCF #94988]
Date: May 12, 2015 at 15:13
To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

I believe I have tried to answer this question before in one of our offline discussions. I try to answer it here precisely. My structured overlay topology is composed of multiple small subgraphs of the main underlay internet topology. At the same time these small interconnected graphs can replace a large single overlay graph which all contemporary approaches uses. My experiments show that this gains benefits in publication delay, number of messages that generate during the pub/sub messaging, etc. The matching delays are not however improved in my approach. Let me know if you need more details.

There is perhaps a misunderstanding in the last paragraph of your email. My last presentation to NDS has no content about my structured overlay approach. The concept was developed early this year while the presentation was done in May 2014. [REDACTED] asked me one question about testbed and [REDACTED] suggested that I should start looking into PlanetLab for evolution purpose. The overall impression I got from audience is that I put too much in my plate and I have to cut down to some specific idea. I did not know much at that time because working in multiple areas at the same time, I was not deeply focused on one specific issue.

Note:

The presentation was done on May 2, 2014, and work on SCTON was started after February 20, 2015, and the details were shared with Dr. Ka on April 30, 2015. Despite facing frustrating and occasionally insulting attitude in one-on-one undocumented meetings, I did not stop providing details of my research progress to Dr. Ka. It had become normal to receive questions in emails after having detailed discussions about questions and answers in one-on-one meetings. Some questions do not have answers and should not be asked or repeated.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Re: [UW-MFCF #94988]
 Date: May 12, 2015 at 15:23
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

On 12/05/15 03:13 PM, Shafique Muhammad wrote:

I believe I have tried to answer this question before in one of our offline discussions. I try to answer it here precisely. My structured overlay topology is composed of multiple small subgraphs of the main underlay internet topology. At the same time these small interconnected graphs can replace a large single overlay graph which all contemporary approaches uses. My experiments show that this gains benefits in publication delay, number of messages that generate during the pub/sub messaging, etc. The matching delays are not however improved in my approach. Let me know if you need more details.

I remember that explanation, but it is not the example I am looking for: Start from a specific underlay topology (with capacity numbers), describe a traditional overlay, and then show how your overlay performs better. The same strategy is needed for the proper evaluation. I don't think I have seen that either and in particular, not with actual underlay capacities.

I have tried to explain why you need this, despite other literature in pub/sub does not seem to cover it.

There is perhaps a misunderstanding in the last paragraph of your email. My last presentation to NDS has no content about my structured overlay approach. The concept was developed early this year while the presentation was done in May 2014. [REDACTED] asked me one question about testbed and [REDACTED] suggested that I should start looking into PlanetLab for evolution purpose. The overall impression I got from audience is that I put too much in my plate and I have to cut down to some specific idea. I did not know much at that time because working in multiple areas at the same time, I was not deeply focused on one specific issue.

You are right, I used the term "structured" incorrectly in this context. In your presentation last year, you already presented an overlay that would be "denser" than the underlay, i.e., a supergraph. That's where the gap and potential problem arises - independent of the structure of the overlay.

Off to class now, see you later...

Note:

Without using scientific examples, I use plain language to write this note. PhD research is about narrowing down a problem to produce novel solution for credible research. Even the simple phrase "capacity numbers" would change the direction of a PhD level research. Whatever Dr. Ka mentioned new (capacity numbers, denser, etc..) had no relation with my research and he had been repeatedly provided reasons in meetings. But asking them repeatedly was strange.

What were the details of the important concepts that Dr. Ka had been trying to explain to me and what were my replies? I did not know what was going on. I did not know the plans of UW about me. I was unaware of the situation and reasons. I knew that Comp2 document was not about what Dr. Ka had started mentioning after April 6, 2015, the day when Comp2 document was finalized and exam date was decided

From: **Shafique Muhammad** muhammad.shafique@uwaterloo.ca
Subject: Re: paper
Date: May 12, 2015 at 15:29
To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

I am not sure whether I have studied this paper before but I can assure you that I have studied multiple paper on similar approaches. This is not relevant to what I am doing. I can prepare a paper review if you want. I have put filters on google scholar few years back and I scan all papers when I receive a notification. The following paper is the latest in my list and I would like to read it as soon as I can. The paper written by authors from Facebook and Cornell University and it mainly tries to handle big data in pub/sub. It is published this in NSDI 2015 and available on conference website only.

<https://www.usenix.org/system/files/conference/nsdi15/nsdi15-paper-sharma.pdf>

On Tue, May 12, 2015 at 2:35 PM, [REDACTED] Ka [REDACTED]@uwaterloo.ca> wrote:
I've come across this paper - not sure whether you have already seen it:

<http://dx.doi.org/10.1109/HPCC.2012.32>

I just scanned it, but it seems relevant, because it is about a structured overlay and one of the evaluation metrics is "link stress". Also, they use a OMNET++, i.e., a simulator, rather than large-scale experiments.

Note:

Dr. Ka sent me a paper which used a link stress or capacity numbers where the authors used a simulator (not the real or close to real environment) for evaluation. An evaluation done with simulator is of inferior scientific credibility in comparison to the one done in real or close to real environment. I could mention a large number of more credible research papers to support my point of view but did not do that because of fear of offending my supervisor Dr. Ka. In simple words, the paper was irrelevant to my work and I used a humble and professional way of replying him. I offered to write a two/three pages review to provide complete analysis of the paper and its research quality. That was a normal pattern of evaluation of some scientific idea. Dr. Ka had maintained this attitude of wasting my time in useless research activities, which was not a big issue provided he would have talked about my research.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: paper
Date: May 12, 2015 at 15:38
To: Shafique Muhammad muhammad.shafique@uwaterloo.ca

On 12/05/15 03:29 PM, Shafique Muhammad wrote:

I am not sure whether I have studied this paper before but I can assure you that I have studied multiple paper on similar approaches. This is not relevant to what I am doing. I can prepare a paper review

It is *very* relevant to your methodology: They seem to understand that in case of a overlay supergraph, performance must be measured in relation to the underlay capacity. Also, they seem to find ways to evaluating using a simulator, rather than requiring a large-scale server rack. Both of these are areas where your work/approach is weak, so you would be better served taking my input seriously, rather than dismissing it!

Note:

In parallel to receiving emails like above, a lot more was going in parallel in one-on-one meetings which I had to attend to provide updates about my research. Dr. Ka had presented with a number of research papers to prove what I was demanding and asking was legitimate but it was of no use.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: Fwd: Shafique on Syn cluster
 Date: May 12, 2015 at 21:18
 To: Shafique Muhammad muhammad.shafique@uwaterloo.ca

FYI...

----- Forwarded Message -----

Subject: Shafique on Syn cluster
 Date: Tue, 12 May 2015 21:16:07 -0400
 From: [REDACTED] Ka [REDACTED]@uwaterloo.ca>
 To: [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]

Lost track of all the branches of this email communication.

Shafique would like to work towards a paper based on his current software prototype and using the experimental approach he devised earlier. Can he have access to the Syn cluster for the next 6 weeks? I don't expect him to continuously reserve time slices, but in an on/off pattern.

Thanks,
 [REDACTED]

Note:

After the incident of IP breach, Dr. Ka approved my access to SYN cluster (a cluster network reserved for research at SCS) on the same day. I was given restricted access for the limited time. Later on, I learned that one of his master student had more privileged access than me. Dr. Ka knew about SYN cluster when I started working under his supervision at UW. SYN cluster was purchased from public grants awarded to few faculty members of UW.

After generating initial results, I learnt that the results generated on my desktop machine were legitimate. I started writing a technical report but my speed was very slow. In fact it took me more than 10 months to finish my first technical report. Although I was doing other things in parallel but the most evident obstacle in my progress was my poor mental health. I had started creating notes about SCTON from February 2015 and made my first technical report public on December 22, 2015. The report includes evaluation of static and dynamic routing.

From: **Shafique Muhammad** muhammad.shafique@uwaterloo.ca
 Subject: Re: seminar
 Date: May 25, 2015 at 16:05
 To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

Hi Prof. Ka [REDACTED]

From our last discussion in your office, I thought that we were clear about the issue. Typing emails takes time, please invite those members again and I do an informal presentation/discussion on overlay underlays topology relation. I know what is currently being done in this area and I don't miss any top fresh publications.

The best attempt is made by this guy:

<http://www.ipvs.uni-stuttgart.de/abteilungen/vs/abteilung/mitarbeiter/muhammadadnan.tariq%20%20%20%20%20?>

Just check his publications in 2013, he changed his problem solving track later on in 2014 and so on. I will collect faculty signatures tomorrow.

Regards,
 Shafique

On Mon, May 25, 2015 at 10:56 AM, [REDACTED] Ka [REDACTED]@uwaterloo.ca> wrote:
 Hi Shafique,

sorry I was tied up in meetings for all of Friday. I believe the presentation, its reception, and the questions asked, expose the same fault lines that we have (unsuccessfully) discussed at length. I am not sure whether it makes sense to re-enter this discussion - let me know...

In any event, please do not forget to collect the faculty signatures for the presentation.

Best,
 [REDACTED]

Note:

I had a research seminar on May 22, 2015, which was attended by multiple faculty members and a system support engineer. The engineer asked me the same question of capacity number which Dr. Ka had asked before. I answered which I was sure he could not understand.

After the demand of an illogical example and capacity numbers, Dr. Ka raised another issue almost 10 days before the Comp2 exam. This time it was mapping of topologies (another issue which had no solution). I had explored that issue before and provided a detailed answer to him in April 2015. A PhD researcher had already explored this problem and faced a deadlock. Now the point of discussion was not the dummy Comp2 document that I had to defend but those irrelevant research problems which found to be having no solutions but Dr. Ka wanted me to provide him solutions. SCTON, static and dynamic routing algorithms, and my all other claims were out of seen.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: seminar
Date: May 25, 2015 at 17:06
To: Shafique Muhammad muhammad.shafique@uwaterloo.ca

On 25/05/15 04:05 PM, Shafique Muhammad wrote:

Hi Prof. Ka [REDACTED]

From our last discussion in your office, I thought that we were clear about the issue. Typing emails takes time, please invite those members

Maybe we are not talking about the same problem:

There is a logical gap in your work, because you skip the mapping of the logical topology onto the physical topology. I believe this is a critical gap that needs to be addressed soon, but you disagree.

At the very least, whenever you report experimental results, you have to state the quantitative properties of the simulated physical topology (such as simulated/assumed link capacity).

On Friday, when people asked about this in general and with respect to your experimental results, you evaded the questions by pointing to general overlay/underlay work, just like are doing below. I find this insufficient.

Your handling of such questions is likely critical for the Comp2 exam.

Note:

Dr. Ka wrote another email mentioning research issues which had no solutions. He again correlated irrelevant topics with Comp2 exam and my research. I was unable to understand what was going on.

From: **Shafique Muhammad** muhammad.shafique@uwaterloo.ca
 Subject: Re: seminar
 Date: May 26, 2015 at 15:44
 To: [REDACTED] Ka [REDACTED]@uwaterloo.ca

I wish I would have enough time to answer last two/three questions asked in my seminar. I now realize that these kind of questions are asked by people who work mainly in underlay networks or with overlay networks where address based routing is used. My work is related to filter/content based routing. I am comfortable to know that in the comp II talk, I will have enough time to explain things, although I don't think my comp II document has anything related to topology mapping. We removed that part from the document long ago.

I am composing this long email just to make sure that I touch all technicalities related to this issue. At the same time, I do realize that there are some problems which do have optimal solutions.

When it comes to knowing underlay topology, few things are important in content-based PS system: (i) the structure of the underlay topology itself; which is hard to find barbecue of many security and propitiatory reasons, but I assume this part is done without any difficulty (although almost impossible). (ii) after knowing the topology, the next task is placing PS brokers to different locations. We can use some mobile agent technology to achieve this and assume that the agents are reliable to all different domains and we are able to deploy our brokers. (iii) Now the main problem here is the clients and traffic knowledge. We cannot place PS brokers everywhere but to only those places where publishers and subscribers are expected. How to find this? (iv) We again assume that we have some kind of approach to roughly know the locations of those publishers and subscribers and plant our PS brokers close to them so that the messages are sent with shorter delay. (I have made some assumptions till this point).

Now we have an overlay topology inferred from the underlay topology with almost no gap and the number of PS brokers is equal to the number of routers/switches. I believe that a networking guy will admire this approach not knowing that content-based systems have highly expressive subscription models and the matching process is just like executing a query on an in-memory db. This arrangement can easily bring down an overlay network even with high bandwidth lines because PS brokers are not able to handle the overhead of the matching process and they cannot forward messages efficiently. We make another assumption here, that we deploy our PS brokers on high end machines connected to each router. Is this solution scalable to handle millions of clients?

Somebody may say yes, it is scalable because he has lot of money to buy high end machines. Clients are separate processes that are mostly run from separate machines (from homes, offices, buildings, cities, areas, etc). We assume that clients connect to some local nearby PS broker that is deployed on some high end machine so that clients can receive/send messages. Those who know filter based routing will not admire this solution because it generates a lot of extra traffic (because of uni-casting). On the other hand placing brokers close to areas where clients are located can reduce traffic (one copy of message is send in broker to broker routing). At the same time we can try to have max conformity with the local underlay topology. This is what SCTON cluster based approach offers which no other topological approach offers at the moment. If fact currently there is no cyclic topology approach which is useful at large scale. SCTON is the first

topology approach which is useful at large scale. SCTON is the first step towards solving this problem.

The experiments are performed on a single machine so informing about link capacity is not logical. Secondly, I described only number of messages that are generated and they are not related to the link capacity but to tree length. SCTON guarantees that the length of the routing tree is always the minimum. This is never done before in the area of PS systems. Those ask such are not aware of state of the art. This gave me a clear indication that the audience has no knowledge of the area, which is not a big issue and asking irrelevant questions is fine provided they accept the answers.

A PS system cannot stop sending events even if a link is overloaded because there is always only one path from the sender to the receiver. Some brokers offer buffering though (again this is not address based routing). When a certain ratio of the number of messages in the input queue to the number of messages in the output queues reaches, an internal message is triggered to indicate that the broker is overloaded. This happens only when the TCP connection is not able to send messages to the next receivers because there may be a/some high message rate publishes or a large number of subscribers connect to the same broker which causes generating a large amount of messages in certain part/links of the overlay. This scenario is discussed in detail in the initial versions of my comp II document (check the Overloading section). To mitigate the situation, less loaded areas of the network are identified dynamically and clients are moved there which generates a lot of extra messages and updates in the routing tables. This is not required in SCTON because routing can be done adaptively by using multipath facility and without embedding TID information in the messages.

In the next seminar I will make sure that I do a talk for not more than 15 mins so that audience get sufficient time for questions/answers session.

Note:

After the last email, I wrote a detailed reply to Dr. Ka and categorically tried to address the issues in the limited time. I strongly believed that it had no relation with my work but always tried to provide answers to Dr. Ka. This precluded me from writing my first research paper before the proposal exam.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
Subject: Re: seminar
Date: May 26, 2015 at 17:33
To: Shafique Muhammad muhammad.shafique@uwaterloo.ca

I do not see any progress in your understanding of the problem. Thus I can only repeat my concern for your Comp2 exam. However, I am giving up trying to explain this to you. We'll see where are after the exam.

Note:

A supervisor should provide some hints in the form of publications or reviews. Dr. Ka never did that. The above email was another another warning from him about the upcoming Comp2 exam. My Comp2 presentation slides had no content on capacity numbers, illogical example ("systematically illustrative quantitative with some defensible state of the art"), SCTON, static or dynamic routing in SCTON, and overlay mapping because it was irrelevant to the research idea in Comp2 document. On June 5, 2015, I answered all questions without any difficulty but was declared barely passed.

From: [REDACTED] Ka [REDACTED]@uwaterloo.ca
 Subject: PhD supervision
 Date: June 8, 2015 at 17:11
 To: Shafique Muhammad muhammad.shafique@uwaterloo.ca

Dear Shafique,

I have reflected upon your grad studies under my tentative supervision during the last 12 months. While you have, just barely, passed the Comp II exam last week, I have still come to the conclusion that I cannot be your supervisor any longer. The reasons are three-fold:

First, it is abundantly clear that you do not accept my scientific authority on the topic of your research. I see my role as a supervisor in providing direction and ensuring the validity of the ongoing research. However, over the past months you have mostly ignored my advice.

Second, the CompII exam has shown that the path from here towards an acceptable PhD thesis will be very long and difficult. Given my concerns outlined above I fear that I will not be able to steer you in the right direction and ensure a successful outcome in a reasonable amount of time.

Finally, you have told me about your personal situation, and it is my sincere recommendation that you terminate your PhD studies. You are in a reasonable position to explain to future employers why you were unable to follow through with the PhD program, because of personal circumstances. Making sure that all milestones are completed (CompII, seminars?) should strengthen your case. Make sure to collect signatures for all the relevant forms.

Note:

On June 5, 2015, I was declared "barely" passed in Comp2 exam. The committee wrote baseless and irrelevant comments on my Comp2 report. I protested to SCS administration but the report was approved. Dr. Ka resigned from the supervision by sending the above email. The Comp2 report was irrelevant to my research but even then was used by Dr. Ka as basic instrument to resign from supervision. I was not failed in the Comp2 exam because of the following possible reasons: (i)- despite all hurdles and environment of mental distress created by Dr. Ka, I had established myself in research and did not stop doing research. UW knew that I was not aware of the policies and guidelines of the university and unable to understand my complaint about the research project. Failing me in the Comp2 exam would provide enough motivation to understand the situation, which would not be in favour of UW; (ii)- Breach of IP Policy by Dr. Ka; (iii)- I did not know that UW did not follow its own guidelines and policies in assigning a new supervisor and investigating the complaint about the unseen research project that Dr. C and Dr. A were doing.

Dr. Ka was not doing a "tentative supervision". He was properly appointed supervisor because all the paper work was completed (page 6). Dr. Ka agreed to continue supervision on the condition of successful completion of the Comp2 exam but resigned from supervision after I successfully passed the exam. The main point to highlight is the Section 3.16 of GGRS and IRAG, which UW was obliged to follow (and launch multiple investigations) before assigning a new supervisor. Since it did not follow those guidelines and policies to assign a supervisor, Dr. Ka started mentioning he was just a tentative supervisor which inherently meant that no supervisor was assigned till June 2015 (almost 15 months after the actual complaint to the SCS administration) (more on this important point is later in this document).

I had a meeting with Graduate Director SCS. He asked me either find a supervisor or withdraw from PhD program. I did not know that he had no authority demand a withdraw. I did not know that it was responsibility of SCS to appoint a supervisor for me. I started talking to SCS faculty members but no one agreed to supervise me. Graduate Director SCS advised me to transfer to some other Canadian university after spending 5 years in PhD program at UW.

From: Shafique Muhammad m5shafiq@uwaterloo.ca
Subject: Re: funding
Date: July 1, 2015 at 13:13
To: Computer Science Grad Director cs.graddir@uwaterloo.ca

I have explored all available options including transferring to some other university. I initially thought that it will be easy from UW to move to some other university and get credit for whatever I have done so far. Going to some other university means a complete restart of PhD, I will get some course credit though but still have to take 2 more grad courses to fulfill some requirements there. However, the funding will be tied to the research area (closely related to my current work) that will be assigned by the future supervisor. On the other side, I am comfortable with my current research, have a set of problems, and a thesis plan. I am not lost, my research is novel and I have results that show that my idea is perfectly valid and will impact future research in my area. Despite of initial loss of few years in my PhD endeavor, I am confident that I am going to finish this in less than two years provided I don't change research area.

I manage my expenses through student loan as I did never get any internal or external scholarships. If I don't get a RA/GRS, I can apply for a number of bursaries available through the university. The main issue is the supervisor; despite of many requests, no body is willing. I am coordinating with a top research group in my area at UofT and I don't require technical or non-technical assistance from any profs here at UW. Meanwhile, I come to know that some students in civil engineering faced similar issues and then some admin/director from the department worked as the supervisor, just to fulfill requirements.

Note:

SCS administration did not listen to my complaint about Dr. Ka and his supervision although SCS administration was responsible to investigate. I felt completely helpless. I had multiple meetings with Graduate Director SCS and every time he asked me to withdraw because of not having a supervisor. I sent emails, talked and requested to many faculty members of SCS to supervise me but nobody agreed although I was willing to work without funding. I used to spend most of my every day either visiting UW faculty members and SCS administration to solve the issue caused by Dr. Ka resignation. I had invested my career and also accumulated hefty student loan.

I sent my research results to a research group at the University of Toronto. I did an invited talk there and the group leader agreed to co-supervise me. SCS administration refused to arrange a supervisor at UW. Transfer to a new university would mean a restart of PhD, which my circumstances did not allow. From July/August 2015, I started having pain in left side on my chest in and around my heart. I was unable to understand the reasons of the chest pain as I never had chest pain before in my life. It started getting worse with more and more stress due to my situation. I thought of having cardiac health issues.

From: [REDACTED] M [REDACTED]@uwaterloo.ca
Subject: RE: Request for a high computing resource for research
Date: September 11, 2015 at 03:45
To: Shafique Muhammad m5shafiq@uwaterloo.ca

Hi Shafique,

When a student doesn't have a supervisor (as is your case), then the graduate director is the acting supervisor. supervisor, but I can sign forms and give some (usually non-research) advice. As acting supervisor, I do not pr

I know nothing about SYN cluster. Who is in charge of it?

[REDACTED]
Graduate Director
Cheriton School of Computer Science
University of Waterloo

From: mohamed.shafique@gmail.com [mohamed.shafique@gmail.com] on behalf of Shafique Muhammad [m5
Sent: Friday, September 11, 2015 00:20
To: [REDACTED]
Cc: [REDACTED]
Subject: Re: Request for a high computing resource for research

Hi Prof. M [REDACTED]

I am in need of high computing resource for my research. My account on SYN cluster is expiring at the end of this month and I don't have access to any other high speed computing resource. SHARCnet is not a viable solution for my work because of the reasons that I mentioned in my last email. I use minimal resources of SYN which does not cause any interruption to other users and there are many free compute nodes most of the time. I just came to know from [REDACTED] last email that you are acting as my supervisor now although my quest account still shows that [REDACTED] is my supervisor. I request for an access to SYN cluster until I finish my on going evaluation tasks.

Regards,
Shafique

Note:

Despite having poor physical and mental health, I did not completely stop working on my research. SYN cluster administrator had issued a warning of stopping my access after September 2015. I came to know that Graduate Director SCS was my acting supervisor.

From: **Computer Science Grad Director** cs.graddir@uwaterloo.ca
 Subject: RE: Request for a high computing resource for research
 Date: October 2, 2015 at 10:29
 To: mohamed.shafique@gmail.com
 Cc: [REDACTED]@uwaterloo.ca



Hi Shafique,

I am sorry that you are having difficulties finding a Waterloo CS supervisor. However, it is your responsibility to find a new supervisor--the school does not find supervisors for students. Note also that your Waterloo CS supervisor is not just a formal requirement: your Waterloo supervisor has the responsibility to ensure that your research and dissertation meet Waterloo standards. Further, if you expect your Waterloo supervisor to provide computing equipment or to advocate on your behalf to use other faculty members' equipment, that is a further load on your Waterloo CS supervisor (likewise if you're expecting the supervisor to provide RA funding). The School can not impose faculty members to take on such a load; that is something that you have to negotiate with your potential supervisor. The School can not even ask faculty members to take on this task, since you're the one who knows what the requirements are for your work.

And to repeat what I stated earlier and to make clear the importance of your finding a Waterloo CS (co-)supervisor: if you do not find one by the end of this term (Fall 2015), then you will be required to withdraw from the program.

If you are unable to find a Waterloo CS supervisor, then I strongly recommend that you apply for admission to the research group that you mentioned in your message, which I believe is not at Waterloo. While this may require a change of institutions and extra time to complete your degree, you can not remain in the Computer Science PhD program at Waterloo without a Waterloo CS supervisor.

[REDACTED]
 Graduate Director
 Cheriton School of Computer Science
 University of Waterloo

From: mohamed.shafique@gmail.com [mohamed.shafique@gmail.com] on behalf of Shafique Muhammad [m5shafiq@uwaterloo.ca]
 Sent: Thursday, October 01, 2015 18:06
 To: [REDACTED]
 Subject: Re: Request for a high computing resource for research

Hi Prof. M [REDACTED]
 I have talked to some faculty members recently and none of them is willing to supervise me. Some profs showed willingness but now they are not responding my emails. So I am giving up this and requesting school to give me a supervisor to fulfill this requirement.

I am currently collaborating with the top research group in my area and getting all technical help that I need to finish my PhD work. I have met all the requirements except the thesis in the last 13 terms and my progress and results indicate that I will finish in next 3-5 terms max.

On Thu, Oct 1, 2015 at 5:58 PM [REDACTED]@uwaterloo.ca> wrote:
 Hi Shafique,

One reason you need a supervisor is that your supervisor is supposed to provide you with necessary resources. As your acting supervisor, I checked with SYN for you, but beyond that I can't do much since I don't know about clusters, etc. Nor is it the school's responsibility to find you such resources. I'm sorry if this invalidates the results you've generated so far, but again, it is your supervisor's job to find such resources (or negotiate with the SYN group, etc.), which is why it is critical that you get a supervisor.

[REDACTED]
 Graduate Director
 Cheriton School of Computer Science
 University of Waterloo

From: mohamed.shafique@gmail.com [mohamed.shafique@gmail.com] on behalf of Shafique Muhammad [m5shafiq@uwaterloo.ca]
 Sent: Thursday, October 01, 2015 17:52
 To: [REDACTED]
 Subject: Re: Request for a high computing resource for research

Hi Prof. M [REDACTED]
 There are two issues: (i) finding a cluster which suites my need; (ii) if I don't get access to SYN, all my results generated so far are void and I will have to restart when I get access to some other cluster.

Note:

Graduate Director SCS was consistently pushing me to move to some other university or withdraw. I was not informed of UW policies and guidelines and thought that repeated demands from SCS Graduate Director to withdraw was a formal decision of the university. I later on came to know that SCS Graduate Director had no right to ask a PhD student withdraw and leave.

From: Shafique Ahmad Idresi mohamed.shafique@gmail.com
Subject: Re: Request for a high computing resource for research
Date: October 2, 2015 at 16:10
To: Computer Science Grad Director cs.graddir@uwaterloo.ca
Cc: [REDACTED]@uwaterloo.ca

Hi Prof. M. [REDACTED]

I have invested my professional career into this PhD program and I don't have an option other than to finish it and leave. I must mention that this is not just important for me, it is important for the future of my kids as well, and as a father I will put all my very best efforts to save future of my kids. Going to other university is not an option and it will not be considered now and not in future.

I will have to spend some time to find a suitable solution of the hardware resource issue as there are dozens of public clusters available at the other Canadian universities and I have no idea which one fulfills my needs.

I am quite optimistic that the solution of supervision will be found at the university level and I am going to start the process. To prepare for the this, I am trying to educate myself about the university policies and could not find a suitable information. I have studied the following documents:

- 1- A Guide for Graduate Research and Supervision at the University of Waterloo 2011 (available on math web page)
- 2- Policies 70-73

and I am not able to understand which applies to a graduate student who has no supervisor (for sure not the policies 71 and 73). Kindly guide me about this.

We face problems and issues in life and I am no exception. I assure you that I will not loose focus on my research and will continue to make progress (I am committed 100%) although my health is being effected but people around me are taking good care of me.

Regards,
Shafique

Note:

On September 29/30, 2015, I came to know that UW had some policies and guidelines about graduate studies and research. I was under extreme pressure because of my situation and my mental health was also poor. It took me time to gradually understand basics of the policies and guidelines. As I was not aware of all the facts about Dr. C., Dr. A and their useen research project, I was unable to fully understand the situation. However, I could understand that it was responsibility of SCS administration to arrange a supervisor for me.

From: **Computer Science Grad Director** cs.graddir@uwaterloo.ca
 Subject: RE: Request for a high computing resource for research
 Date: October 2, 2015 at 16:46
 To: Shafique Ahmad Idresi mohamed.shafique@gmail.com



Hi Shafique,

I am not able to understand which applies to a graduate student who has no supervisor (for sure not the policies 71 and 73).

Policy 73 is on intellectual property and would not apply to your situation. Policy 71 is about student discipline, which also seems inappropriate. Policy 71 is about students filing grievances and petitions, which would be appropriate if you feel you've been treated unfairly.

Policy and the GSO guidelines tend to focus on when the supervisor terminates supervision of the student. It says very little about your case, where you terminated your supervision under your former supervisor (A).

With regards to the latter, it would be good if you could send me a letter outlining your reasons for your decision to stop working under Dr. A supervision (you should have submitted this at the time you made that decision; my apologies for not asking for it at that time). Likewise, it'd be good if you could send me a discussion of what you have done to find a supervisor since that time.

Graduate Director
 Cheriton School of Computer Science
 University of Waterloo

Note:

Through my last email, the SCS administration came to know that I had learned about policies and guidelines of UW. However, I had no understanding of the underlying issues and not able to understand my situation other than knowing that the fact that GGRS clearly mentioned that SCS was responsible to arrange a supervisor for me (Roles and Responsibilities of Departments/Schools, Section 2). I was not able to understand the most important part in reply of SCS Graduate Director. He said that Dr. A was my last supervisor and that I was required to write a letter to explain why I refused to work with Dr. A.

First, SCS Graduate Director knew that Dr. A not my supervisor but working on behalf of someone else. Second, he knew that UW did not investigate my complaint about research of Dr. C and Dr. A and did not follow the rules and proper procedure to change the supervisor (Section 3.16 of GGRS (Roles and Responsibilities of Graduate Students - Section 2 of this document) and IRAG (brief purpose of IRAG in Section 2 of this document)). He did not mention Dr. Ka as my last supervisor because UW did not follow its own policies and guidelines to investigate my complaint about Dr. C, Dr. A, and their research. SCS Graduate Director took a turn to get the letter from me which SCS administration must have demanded when I complained about Dr. C, Dr. A, and the unseen research project in April 2014. UW was confident to use all possible means against me (as outlined in this document) to handle the situation without doing formal investigation.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
Subject: Re: Request for a high computing resource for research
Date: October 7, 2015 at 05:45
To: Computer Science Grad Director cs.graddir@uwaterloo.ca
Cc: [REDACTED]@uwaterloo.ca

Hi Prof. M [REDACTED]

My last supervisor was Prof. Ka [REDACTED] and not Prof. A [REDACTED]. I refused to work with prof. A [REDACTED] more than 17 months ago because I was not making any progress under his supervision. Writing a letter to explain that why I stopped working with prof. A [REDACTED] is not relevant now. The formal process of change of supervisor was followed and complete paper was done when Prof. Ka [REDACTED] was agreed to supervise me.

As per GSO guidelines, it is responsibility of the school of computer science to assign a supervisor to supervise my research and arrange all the resources that I need.

After receiving an email from Prof. Ka [REDACTED] on June 05 2015, The profs. who I sent emails to request for supervision or co-supervision include: [REDACTED]
[REDACTED]
[REDACTED]

Regards,
Shafique

Note:

I refused to accept SCS Graduate Director's version of facts. I still had to understand lot of information provided in UW policies and guidelines and how to practice them. I had to understand the nature of association of Dr. C and Dr. A with UW and their unseen research project. I was in poor mental health.

From: **Computer Science Grad Director** cs.graddir@uwaterloo.ca
 Subject: RE: Request for a high computing resource for research
 Date: October 7, 2015 at 10:03
 To: Shafique Muhammad m5shafiq@uwaterloo.ca
 Cc: [REDACTED]@uwaterloo.ca



Hi Shafique,

What we would like is a letter of why you refused to work with Prof. A [REDACTED]. That is was 17 months ago just means that your letter is 17 months late. What you told me verbally was that you decided that Prof A [REDACTED] was not doing research. However, a bit of expansion on your reasons (no more than a paragraph) is needed. Please submit this as soon as possible.

Prof. Ka [REDACTED] was not your supervisor. What Prof Ka [REDACTED] agreed to do was to evaluate whether or not he could be your supervisor. He likely played the role of acting supervisor during that time. Regardless, he did send you a letter (with a copy to the CS grad office) of his reasons why he could not supervise you.

I have checked with a former associate dean of grad studies, math (the current associate dean was out of town at the time I checked), and I checked with [REDACTED] Associate Provost, Grad Studies, and both agreed: the department has an obligation to support a student for a reasonable amount of time while the student looks for a new supervisor, but it is the student's responsibility to find the supervisor. Failure to do so in a reasonable amount of time amounts to lack of progress, and is sufficient reason to require a student to withdraw from the grad program.

[REDACTED] agrees that there is a clause in the GSO guidelines that is poorly written that can be misinterpreted in the manner you have done; this does not mean the department/school is obligated to find you a new supervisor.)

Finally, thank you for outlining your efforts to find a new supervisor.

[REDACTED]
 Graduate Director
 Cheriton School of Computer Science
 University of Waterloo

Note:

Graduate Director SCS knew that I was not aware of UW guidelines and policies and that he was responsible to educate me about them. Section 3.16 of GGRS requires that a graduate student who complains about his/her supervisor should provide details in writing. SCS was responsible to investigate the complaint by following Policy 70 (Student Petition and Grievance) and Policy 71 (Student Discipline) before assigning a new supervisor. UW did not do that when I complaint about Dr. A, Dr. C and their unseen research project because my complaint would activate IRAG and everything about Dr. C, Dr. A and their research would become evident. This would result in UW facing severe sanctions, loss of funding, and damage to repute.

UW assigned Dr. Ka as my supervisor without following required formalities. Dr. Ka put the condition of successful completion of Comp2 exam to continue providing supervision (page 6). I would have no other option except to leave the university if I would fail the exam. Despite all hurdles and humiliations, I passed the Comp2/proposal exam. Dr. Ka mentioned that he was working as tentative supervisor and resigned from the supervision (page 43).

I refused to write the letter without understanding its purpose. As Dr. Ka was assigned my supervision after the formal paper work was done, it also mean that UW deliberately did not follow Section 3.16 of GGRS. The email on page 6 is important to understand what SCS administration had planned against me. I was not aware of the IP breach by Dr. Ka. All I could understand that SCS administration was not sincere with me and was not willing to solve my issues. I thought that whatever Dr. Ka did to me was a personality issue and had nothing to do with the university. My health started deteriorating day by day. The University was not ready to obey its own policies and guidelines. I was under immense pressure and helpless because nobody was willing to help me.

From: Shafique Muhammad m5shafiq@uwaterloo.ca
Subject: Re: Request for a high computing resource for research
Date: October 7, 2015 at 12:17
To: Computer Science Grad Director cs.graddir@uwaterloo.ca
Cc: [REDACTED]@uwaterloo.ca

Hi Ma [REDACTED]
Prof. Ka [REDACTED] was my supervisor and there was no notion of working as acting supervisor when he agreed.

And I will not withdraw from my program.

Regards,
Shafique

Note:

I emphasized on the reality of the matter and refused to withdraw from the program. SCS administration did not allow me to get access to free network cluster available with other Canadian universities. This practically stopped my research progress I was working with the hope that one day I would get a supervisor and would finish my PhD research. I became a rolling stone in UW; from one office to another. SCS administration, GSO management, student advocate, GSA management, associate dean Math, nobody on-campus was willing to guide me what to do to exit the loop I was in. I visited UW counselling and health services and learned that I should be going outside of UW for better care. In late December 2015/early January 2016, a student in other university told me that I should file a grievance for internal hearing to formally get UW's point of view about my issues. I started preparing for that despite poor health.

From: **Computer Science Grad Director** cs.graddir@uwaterloo.ca
Subject: Annual progress report
Date: February 19, 2016 at 11:32
To: m5shafiq@uwaterloo.ca
Cc: [REDACTED]@uwaterloo.ca



Muhammad,

As you have not filed the required annual progress report, I have filed one for you; you will find it in your mailbox in the CS grad mail room.

I have listed your progress as Unsatisfactory, noting that the bring your progress up to satisfactory that you need to find a UW CS supervisor.

If you wish to discuss this, please make an appointment to see me in my office.

Prof. [REDACTED] M [REDACTED]
Graduate Director
Cheriton School of Computer Science

Note:

SCS graduate students were required to file annual progress report to SCS administration. Graduate Director SCS, who was my acting supervisor, filed my annual progress report without asking me (other students were still submitting their reports). What he mentioned about my unsatisfactory progress was not according to UW guidelines and policies (there was no policy or guideline which dictated that not having a supervisor amounted to unsatisfactory academic progress). At that time, I had started getting some understanding of my situation. I had come to know that Dr. A, my first supervisor, was not a regular employee of UW.

From: Shafique Ahmad Idresi mohamed.shafique@gmail.com 
Subject: Request for Internal Hearing under UW Policy 70
Date: March 3, 2016 at 02:23
To: [REDACTED]@uwaterloo.ca
Cc: [REDACTED]

Dear [REDACTED] W [REDACTED] (CC: [REDACTED])

I am 5th year PhD student at the school of computer science. Through this email, I am requesting an internal hearing of my grievances under UW Policy 70. Kindly find all details in the letter attached with this message.

Regards,
Muhammad Shafique

Student # 20397754



shafique_20397
754.pdf

Note:

I filed a grievance for internal hearing at UW on March 3, 2016, after coming back from emergency of a local hospital. I thought internal hearing of my grievance was a prerequisite before seeking help from a lawyer.

From: Shafique Muhammad m5shafiq@uwaterloo.ca
Subject: Fwd: Request for Internal Hearing under UW Policy 70

Date: April 27, 2016 at 02:07

To: president@uwaterloo.ca, provost@uwaterloo.ca, [REDACTED]@uwaterloo.ca, [REDACTED]@uwaterloo.ca, [REDACTED]@uwaterloo.ca, [REDACTED]@uwaterloo.ca, gsa-pres@uwaterloo.ca

Cc: A [REDACTED] Ka [REDACTED]@uwaterloo.ca, [REDACTED]

Dear Members of Senate,

I am 6th year PhD student at the School of Computer Science and working without a supervisor for the last almost a year. I was initially supervised by Professor A [REDACTED] and could not make any progress in the first 3 years of my PhD studies. Due to unprofessional attitude of Professor A [REDACTED] I refused to work with him from April 2014. Later on, I came to know that Professor A [REDACTED] is not a regular UW employee and is not an approved supervisor. All details are provided in the attached letter which is written to Dean of Faculty of Mathematics. I informed school administration about Professor A [REDACTED] and requested them to save my future. [REDACTED]

[REDACTED] (reasons are described in the [REDACTED]) my supervisor was Professor Ka [REDACTED]. While working with Professor Ka [REDACTED] I never felt respected. His unprofessional attitude in one-on-one meetings with me and sometime in emails was extremely painful. It is part of my memories forever.

Now I have sent a letter to Dean of Mathematics, Professor W [REDACTED] on March 03, 2016 to start an internal hearing of my grievances. Professor W [REDACTED] says that my case is very complex and it needs more time to digest. Although, the first step of grievance should be completed in 10 business days, I am still waiting to receive results. I am facing immense stress and pressure from all corners of UW for the last two years. This is effecting my family life and health. As a last resort, I am requesting UW Senate to finish my grievance process.

Regards,
 Muhammad Shafique

UW Student# 20397754

Note:

Dean of Math Faculty UW was obliged to provide initial reply of the grievance in 10 business days. I sent multiple emails to him but he provided irrelevant excuses, which wasted almost two months. I wrote the above email to UW Senate to request them process my grievance because I and my family were under extreme mental stress. The above email provides a short summary of my sufferings at UW. The initial reply of my grievance was received on the same day. UW refused to accept any allegations mentioned in my grievance letter.

Later on, the initial reply of the notice of challenge was received on May 26, 2016. UW again refused to accept any allegations despite solid formal proofs in my support.

From: **Computer Science Grad Director** cs.graddir@uwaterloo.ca
Subject: Extension request not approved
Date: June 3, 2016 at 09:56
To: m5shafiq@uwaterloo.ca
Cc: Math Associate Dean Grad mathadg@uwaterloo.ca



Mr. Shafique,

I am writing to inform you that I have reviewed your extension request (to continue in the graduate program at Waterloo) and that I did not approve the extension. As this was a faculty level extension request, my decision was reviewed by the Associate Dean of Graduate Studies, Math, who also did not approve the extension.

If you have questions concerning this decision, please contact the Associate Dean of Graduate Studies, Math.

Please send an acknowledgment of receipt of this message.

Professor [REDACTED] M. [REDACTED]
Graduate Director
Cheriton School of Computer Science

Note:

SCS graduate students were required to request for time extension if they passed the time limit to complete the program. It was a normal procedure as many students would required time extension. My request for the time extension was refused by the University although it knew that my first three years were wasted due to Dr. C and Dr. A. There were many students at SCS who had spent more time than me but were given extension to continue their PhD. I requested for a formal decision explaining the reasons of denying my extension request because I wanted to file a grievance for internal hearing. I was informed that my extension request had been denied at all levels so I could not file a grievance. This again was not according to UW policies and guidelines as students always have rights to file grievance from university's decision.

On July 6, 2016, I received the final reply of the grievance I filed on March 3, 2016. UW refused to accept all allegations. The investigation was based on the false belief that I was aware of UW policies and guidelines when reported events occurred. I provided evidence in form of emails while UW's final grievance mostly contained misleading statements and assumptions, baseless interview talks with my supervisors, and twisted/incomplete text. Replies of some important facts was based on current policies of SCS which was misleading as SCS had changed its relevant and applicable policies at the time of my admission. I was informed that Dr. A was my co-supervisor but no information about my actual supervisor between January 2011 - April 2014 was provided. UW did not honor its own IP policy and refused to accept that Dr. Ka breached IP policy. Most important, UW completely ignored the allegations related to the research project and did not follow investigation guidelines provided in IRAG. I filed a law suit on May 23, 2018, and during preparation for a court appearance learnt that Dr. C, who was principle investigator of the unseen research project, was my supervisor from January 2011 till April 2014. I did not have even a single meeting with him in that period of time and repeatedly mentioned in emails sent to SCS administration that Dr. A was my supervisor.

From: [REDACTED]@uwaterloo.ca
 Subject: Re: Details about Enrollment Termination
 Date: July 28, 2016 at 09:14
 To: Shafique Muhammad m5shafiq@uwaterloo.ca, [REDACTED]@uwaterloo.ca

Dear Muhammad Shafique:

Thank you for your patience as I worked to understand your situation.

My understanding is that your studies continued beyond your term limits and, as such, you were required to file a petition for Extension of Program Time Limit. That extension was not approved. According to University Policy, you were discontinued from your program. I also understand that you received an email from Professor Ma [REDACTED] on June 3, 2016 explaining this outcome to you. A further, clarifying email was sent to you on June 4, 2016.

In response to your requests below, I can confirm that you were discontinued from your program as a result of a decision to not approve your Petition for Extension of Program Time Limit. I am also certain that you were notified by the School of Computer Science about this decision on June 3.

Kind regards,
 Dr. [REDACTED]

On 7/26/2016 9:54 PM, Shafique Muhammad wrote:

Dear [REDACTED]
 I was 6th year PhD student at the School of Computer Science, University of Waterloo. On July 15 2016, I was informed by school's grad office that my registration is terminated and my Quest account is closed. Could you please confirm that my registration is terminated? Please let me know precisely the reasons of termination of my registration I did not receive any formal message/email yet.

Regards,
 Muhammad Shafique
 Student#20397754 (terminated)

--
 [REDACTED]
 Associate Provost - Graduate Studies
 University of Waterloo Graduate Studies

[REDACTED]
 519 888 4567 ext. 37538

Note:

After release of final grievance reply, UW blocked my access to online resources. I eventually came to know that my enrolment had been terminated without prior notice. The Associate Provost did not explicitly mention which policy was used to terminate my enrolment.

I was enrolled in Summer 2016 term and had paid fee. My enrolment was terminated in July 2016, just two weeks before the end of the term and academic year. This unlawful decision converted my student grants and bursaries into student loan which resulted in adding \$24,000 in my student loan. I was asked to pay more than \$84,000 to governments of Canada and Ontario.

From: [REDACTED]@uwaterloo.ca
 Subject: Re: Details about Enrollment Termination
 Date: August 5, 2016 at 08:56
 To: Shafique Muhammad m5shafiq@uwaterloo.ca

Dear Muhmmad Shafique:

I apologize again for the delay in responding. As you can expect, each set of questions requires some investigation on my part.

I can clarify the process related to your situation.

As we've discussed, you completed a petition for Extension of Time limits. The Faculty of Mathematics made a decision that was conveyed to you on June 3. Subsequently, the results of that petition were conveyed to the Graduate Studies Office. Since you had been discontinued in your program, your access to University systems was not continued. This is the meaning of "The GSO has been informed and will handle it from here."

You raise concerns about having your access discontinued during the spring term for which you had paid fees. I note that your official withdrawal date from the University was set to April 30 in order to facilitate a refund to you. I am aware that you received a refund less outstanding repayments.

I understand that you perceive both the loss of access to University systems and the timing of that event as as problematic. But, as of June 3, you were discontinued in your program. This decision dictates all the subsequent events.

You ask if you are able to grieve this decision. I refer you to Policy 70, particularly section 4, that establishes the conditions under which a grievance may be filed.

Kind Regards,
 [REDACTED]

On 8/4/2016 1:19 AM, Shafique Muhammad wrote:

Dear Dr. [REDACTED]
 I do understand that you are aware of my case and processing of the grievance that I filed, which was subsequently processed by the Faculty of Mathematics. All I want is to make sure that I follow the university procedures during this termination process (I believe that termination is more meaningful than discontinued). The last two emails from Prof. M [REDACTED] was about rejecting my request for the extension. The emails do not mention termination of my registration, but that the matter will be handled by GSO. Here is the exact wording:

"To be clear: your extension request has not been approved at all levels. The GSO is has been informed and will handle it from here."

Later on after July 15 2016, almost 10 days before the end of classes of Spring 2016 term, I came to know that I do not have access to online student resources. When I contacted library and CS grad office, I came to know that GSO has closed my Quest account and blocked my access to all online resources.

Can you please explain:

- 1- Is it not part of the formal process to inform a student about termination of his registration? GSO should have sent me an email before closing my Quest account.
- 2- Why my registration is terminated at the end of the Spring 2016 term while I have paid fee and was working on my research? The university could have done that either before the start or at the end of the Spring term.
- 3- Which policy or guideline GSO followed to make this decision?
- 4- Can I file a grievance against this decision?

I appreciate you spending time on my case.

Regards,
 Muhammad Shafique

Note:

Associate Provost Graduate Studies UW did not provide answers to my questions. In particular, which policy was used to terminate my registration. His explanation about my termination was not supported by UW guidelines and policies. UW did not allow me filing a grievance because it could not terminate my registration during grievance hearing and this would not allow adding extra \$24000 in my student loan.

From: **Shafique Muhammad** m5shafiq@uwaterloo.ca
Subject: Re: Fwd: Details about Enrollment Termination
Date: August 12, 2016 at 08:00
To: [REDACTED]@uwaterloo.ca
Cc: [REDACTED]@uwaterloo.ca

Dear Professor [REDACTED]

Thanks for taking time to reply my emails. I do see many policies and guidelines made public by the university to help students and others understand university procedures to handle different matters. However, I was unable to find a policy which could help me understand my termination as student of the university and educate me about the reasons which eventually lead to such decisions. Since I have to explain my termination to the Ministry of Advanced Education and Skills Development to get some relief in repayment of my student loan \$84144, I asked a question to the Faculty of Math and then to GSO about the reasons of the termination. You mentioned that the university used some policy to terminate my registration, but I could not find an online resource to educate myself further. You also mentioned that the GSO handling of my matter means termination of registration and the decision was made on June 03. The information received from UW library and the SAFA indicate that my access was blocked on May 05.

It is a typo, it was July 5.

Since I am still confused and don't have a clear information, I will add these emails in the letter to let the Ministry make her own judgment.

Regards,
Muhammad Shafique

Note:

According to UW Policies 71 and 72, student termination process is executed in a timeframe during which student remain enrolled is his/her program. Sudden decision of termination without giving right to file a grievance put a lot of pressure on me because it not only finished me career but made future of my children insecure. Although UW had released its final reply to my grievance but I was not able to study and understand it because of having mental health issues. In September 2016, I had to visit emergency of Trillium Hospital Mississauga Ontario after suffering continuous severe chest pain. I then left Canada in October 2016 for my medical treatment in Pakistan.