

# Teaching sabbatical – final report

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## 1 Preparation and planning

I first got information that I have received the scholarship from the person in charge of teaching at the Department of Computer Science (CS), School of Computing (SoC) at National University of Singapore (NUS). He informed me that my application has been approved and that I could choose one of two modules to teach “if nobody else teach them”. Both modules were graduate-level seminar-type courses for PhD students, one on Advanced topics in AI and the other on Advanced topics in HCI. So, as he wrote “.. you can essentially teach anything of research interests.”.

My first impression was, wow, they are really efficient at NUS and then I got a bit worried; which one shall I take and how can I best contribute to them, and, honestly, which one will give me the most benefit. I assumed that they knew what they were talking about and that I really was going to Singapore the fall of 2014 and immediately started to think about what I wanted to do and pretty quickly decided that Advanced topics in AI would suit me best, most options to later decide what I really wanted to do, I mean I had half a year to decide and prepare for that. Six days later I got the official acknowledgement from STINT with all the practical details and program for the meeting in February, but at that time we had already started looking for some place to live and found that it is exceptionally expensive.

The next thing to do was to make arrangements for the preparatory visit, one week sometime during the spring, and as my calendar tends to get filled up pretty quickly we, my wife and I, made arrangements for that already in the beginning of January, in cooperation with our contact persons at NUS. They also helped us with accommodation for the pre-visit; a serviced apartment in Kent Vale, see Figure 1, in our case a very expensive 2 bedroom apartment. For the short visit we decided that we could take it but for the longer stay we needed something cheaper. This was also our first encounter with the very efficient administrative personnel that later



Figure 1: Kent Vale

themselves.

What to teach was then my main concern for the rest of the spring and when summer came and we went to Singapore I had not really decided, and interestingly, no one asked me. So I had a course to teach with no content and I have not been asked to supply any information on the course and I was not really sure on how many hours a week I was supposed to teach. Well not really, I had pretty much decided to teach dialogue systems, my main research area for many years, and update it with some interesting practical stuff, that I wanted to try out.

During the spring I also filled in a bunch of forms that were sent to me from a variety of administrators, I still do not know why some forms were handled by the department and some by the Office of the Provost, the latter being Susanna Lam and the former at least three administrators at the department.



Figure 3: My office

As for visa, apartment, tax forms, insurance and all other administrative issues there is a pool of administrators taking care of that. Everything runs as smoothly as one can ask for. Whenever I receive a letter that I do not fully understand I just send it to the administrators and they take care of it. For instance, the Work Permit requires you to go down-town to register and get your Employment pass. Administration collected the papers we had filled in and then scheduled a meeting down-town and when the cards were ready we collected them at the office at NUS. All of this is very professional.

When I arrived in August I met Emily, got my old room back, Figure 3, and an envelope filled with envelopes including a variety of passwords, entrance cards, keys, more forms to fill in, etc. All just waiting for me.

## 2 Tasks and responsibilities

I was teaching the course CS6208 Advanced topics in AI, a graduate course with a total of 8 very enthusiastic PhD students, in fact one of the students was an exchange masters student from the UK. I was allocated a slot between 10 and noon every Wednesday and a classroom. Everything else was up to me. And no one explained anything. A prof is supposed to know how to develop and teach a course I guess.

I am happy that I arrived one week before the semester started to figure out all administrative matters, because there are quite a number of them it turns out. Fortunately, my room was next to Min-Yen Kan's, whom I met during my March meeting and whom helped me a lot then and now explained everything on course administration, actually he filled my whiteboard with web page addresses that I had to visit; to get my course web pages up, to find enrolled students, to register results, to find admin forms etc.

For instance, at NUS there is a course administration system, IVLE (Integrated Virtual Learning Environment) where more or less everything regarding a course needs to be administered. Now, just as in Linköping, that system is used by more or less all departments but computer science. One difference is that at NUS there are certain parts that need to be filled in about the course, otherwise the students can not find it.

But for web page creation, which was my first important task, in order to attract



Figure 5: My eight students during two of their test

and to better understand by trying to come up with issues that the system they have presented could not handle. For some of them this was a new way of thinking. However, although the students in my class were PhD students they were first year students, so this was their first semester as PhD students.

As for the second part I wanted to have it more practical, for one thing because I wanted to do some hacking on my own, never really get time for that in Sweden, and I also wanted to try out an idea I had on doing iterative development in class.

This part started out with a lecture by me on development and one part introducing the language they should use for their project. After that the students iteratively developed a dialogue system in five iterations. Originally I planned for four but most of them, six out of eight, wanted to have yet another iteration, so we ended up with five iterations, Figure 5. At the final seminar we ran all the dialogue systems in class and after that they submitted their final report.

At this time I received a letter from the administration on "Standard operating procedures: marking of examination answer scripts" where I learned, for instance, that there was something called a moderator assigned to my course. This was interesting, after I did all administrative matters at the start of my course no one were asking about anything regarding my course, officially; people asked me when we met in the corridor but that was more a friendly request. When the end of semester approached, however, I began to receive a couple of emails, and even a letter that I had to pick up at the administrations office, where I have not been since I came here to handle all the initial paperwork, on marking exams. Marking exams is dead serious at NUS and there are rigorous procedures around them. Now as I had no written exam, only project reports, or CAs as they are called, Continuous Assessment, I was not really involved in this, but my moderator had to check my marks as they where filled in to the marking system and I had to attend the Marks meeting, see below.

As a side effect of the course I am now writing a paper for an international conference together with a student from my class. He developed a chat bot that incorporated a grammar checker, developed during many years by the research group he is in, which we will use to conduct studies to see if such a language checking chat bot is a good tool for learning a new language.

### 3 Activities during the semester

I have attended numerous seminars and courses and social events. I also presented my own research at a seminar and attended a one day workshop on NLP.

An interesting observation on the initiatives from CDTL is that I was always the only one from School of computing, even if many seminars and courses were very applicable for computer scientists. In that sense NUS/SoC does not differ from LiU/IDA. There are two or three interested teachers that attend pedagogical courses out of their own free will whereas the others never go. I asked people at the department here and they said they never go to CDTL courses.

An interesting initiative was The 5th School of Computing Term Project Showcase where student groups from eight courses present their final projects. The industry is there and sponsor prizes etc. There were 1000+ registered guests and close to 100 projects at the event, Figure 7. The event took place on the evening, 18-22, but still teachers and students attended, and representatives from industry.

I also attended the SoC staff meeting, where the dean, and all five vice deans gave presentations. One of these discussed the new initiative on having the first term grade free to allow students to try out different courses without having to count the grades. One problem is that many students try too difficult courses and fail totally. This discussion was later followed up in a longer mail discussion. But that was more or less the only such discussion I encountered at the school.



Figure 7: Term Project Showcase

The president of NUS gave a speech at one of the large conference halls. I could not get a ticket, it was sold out well in advance but it was broadcast live

on the web. He devoted more or less equal time to teaching, research and entrepreneurship. One interesting reflection from that was that he discussed compulsory internships because very few students do their thesis work outside of the university: many students do not even write a thesis. I will come back to this.

I attended a lecture given by one of the best teachers at SoC. It was a rather conventional lecture. The lecture was recorded and many students take the course at home instead, around half of them according to the teacher. Mainly because they either have other lectures at the same time or because they only have one lecture that day and that they live too far away. Many students dropped in after 15-20 minutes, which did not bother the teacher. One reason is that students have classes in other buildings and there is not always time to move between. There is no academic quarter of an hour at NUS. One interesting feature, which he used intensively, was the ability to draw directly on the power point slide, that was shown on a monitor, and displayed in the lecture theatre.

I have also talked to people at the school during the social event TGIF, which happens around every third week. The school comprise close to 200 professors, associate and assistant professors so I had no chance of getting to know them all, not even the ones in the Department of Computer Science, where I belonged. An interesting reflection is that many are hard to understand, either they speak Singlish, a Singaporean version of English, or have a strong Indian or Chinese accent. Those from the US or Europe are much easier to understand. And the same is true of the students. During some presentations in my class I had severe difficulties understanding some students, and so had my students which gave rise to many clarification questions during the presentations.

Min-Yen Kan has been taking care of me during my visit here and as he is vice

department's and the institute's. It also allows you to widen your perspectives in ways not possible in Sweden, where the calendar is full of meetings.

## 5 Comparison between NUS and LiU

The amount of students at SoC was (AY 2014/15) 1539 of which 495 are female. It is not easy to compare to Linköping as we give courses at a variety of programs. But looking at Computer Science only they have more students here. They also give courses at the Faculty of Engineering, 485 students. What is more interesting is the number of PhD students, 324 of which 85 are female. That is much more than we have in Linköping, both men and women. Furthermore, supervisors do not have to apply for funding for their PhD students, there are a number of students that apply each year and you just have to have attractive enough projects to get one or more, each year.

Another interesting difference is that very few undergraduate students write a thesis. Especially at the master's programme which is by course work only. It is, furthermore, part time with lectures in the evening, because it is mainly for continuous education, i.e. alumni comes back to the university to learn more, get a master's and get at better position. This is not at all the case at LiU, nor in Sweden. Very few alumni come back to take courses. Continuous education is important but how to better promote that in Sweden is not an easy task.



Figure 8: The University Hall

There is very little cooperation between the industry and the university few students do their thesis projects in a company. The president addressed this in his speech and change is on its way. Students need to be trainee at a company, for instance. But that does not involve scientific work. The university, or at least SoC do not conform to labour market needs. That is for Polytechnics to do.

NUS have a large group responsible for quality education including developing teaching and investigating future trends, and, importantly, finding, and applying for, money for teaching development. Important initiatives at the moment

include studying the use of MOOCS, flipped classroom, and continuous education.

The group responsible for quality education comprises eight professors being employed full time by the provost's office to do this. Many of them have projects on the side such as teaching classes, for free, or supervising PhD students and doing their own research. I had a meeting on this with Vice Provost prof Bernard C Y TAN where he explained the importance of having top researchers in this group in order for their ideas to have an impact; if you are a top teacher and researcher other teachers will trust you more. It is clear that there is more emphasis on developing teaching in Singapore than in Linköping, and also, obviously, more money involved, both internal and external funding.

It is possible for teachers not actively involved in research, to be promoted to professor on a tenure track. To be that, they not only need to be excellent teachers, they also need to reflect scientifically on their teaching, its effects and how it can be improved. However, such positions are very rare. Research is the main factor to get promoted and then you do not have to show any teaching skills

There is also a similar group handling research. Their main job is to find new

teachers to reflect more on their own courses.

For the institution I will try to have them understand the importance of having an active group finding new areas of research and call for proposals, form groups of researchers that are suitable for the call, and actively help them apply for research grants.

I will also use knowledge I gained from the CDTL seminars I attended to further advance the work on ICT at the university that I am involved in.

At the national level I will encourage everyone I know to apply for a STINT teaching excellence scholarship. I am forever grateful for this fantastic opportunity.