PhD Student Self-Assessment Report 2013

Shi Yin
UIN: 656384119
Phd Start: Fall 2011
Projected Completion of Course Work: Fall 2016
Projected Qualifier Completion: March 15, 2014
Projected Prelim Date: Spring 2016
Project Graduation Date: Spring 2017

WHAT I DID:

Fall 2011

- Took three courses. GPA was 3.33
  - CS401 Computer Algorithm I (A)
  - CS440 Software Engineering I (A)
  - CS488 Computer Graphics I (C)
- Passed Theory section of old qualifier

I selected these courses for three reasons. First, cs401 was the only course that I was sure that I could handle easily at that time. Since it is so important a course, in itself as well as for passing old qualifier, why not to start my new life from here? Second, after going to every course that I can take (no 400-level prerequisite courses) during first 10 days, Dr. John Bell was the only instructor I could easily understand. "OK, I'd take cs440", I thought. Third, cs488 is prerequisite for those courses I really want to take and I didn't think Computer Graphics course I took before was enough for me to pass the HCC part of old qualifier.

I have to admit that being in this part of world for the first time was like going to Wild West in the first couple of weeks. I enjoyed this free-style kind of life a lot. Then suddenly, course load became so heavy, life became so difficult and I was like among the Lost Generation. I kept locking myself in my bedroom and killing time, which was not sufficient at all, unlimitedly procrastinating every work I had to do. I was totally lost in this new environment.

I didn't expect the grades I received. I was not surprised when I saw the grade for cs488. I totally underestimated some part of the course material and knew I probably wouldn't get a B when I saw the questions in final exam. But I was surprised to see that I got an A in cs440.

During this semester, I also took two weeks to study Theory of Computing for qualifier. It was too much time to be able to answer some basic questions in Theory of Computing and too less to answer the difficult ones. Thanks to the criteria of old qualifier. It was enough to pass it by only finishing Algorithm questions and easy questions in Theory of Computing. I could have used this time in cs488! But "alright, at least didn't get fired. Move on." I thought.

Spring 2012

- Took three courses. GPA was still 3.33
  - CS480 Database Systems (A)
  - CS422 User Interface Design and Programming (B)
  - CS525 GPU Programming (B)
- Passed all Course Requirement of new qualifier

I consider this semester as the real start of my PhD study, because I could finally select courses I've been dreaming of. But due to the catastrophe GPA of last semester and the last-moment fact that Prof. Andy Johnson was going to teach both cs422 and cs525, I selected cs480 to alleviate my pain instead of taking

one more 'infamous' time consuming course Introduction to Networking (cs450), which I always thought I need to take as a complement of my deformed knowledge hierarchy. Good news is I learned introduction to networks myself this semester, finally I'm no longer a "CS major knowing nothing about networks".

Both cs422 and cs525 were too overwhelming. I was very serious but still couldn't handle both of them well. Thanks to my cs422 teammate Paul, I had more time to spend on cs525 projects. Being in such intense courses for the first time, what I could do is trying my best to not fall too behind to get a grade worse than B.

This semester was like riding a roller coaster. At first, I didn't believe I could finish projects that required so many techniques that I didn't use or even didn't hear of in three weeks. Only when I managed to finish it, I gained some confidence. But once the presentation started, my confidence was all gone. I found that my projects were like garbage compared to some of my classmates.

But I have to thank these projects. I did two projects for cs422 and three for cs525. Now they became valuable property of mine. Without them, I would never know how much I could do in three weeks. I would never know to what extent I could sprint, from learning background knowledge from zero, to sprinting and make output before deadline. The more projects I did, the less difficult, I found, for me to handle it, thus the more confidence I gained. At the end of this semester, although the GPA was still poor, I found my B has moved from near C to somewhere close to A. I started to think that getting an A is not a 'mission impossible' and I believed as the time passed by, some day I would be in the position where my senior classmates were in now.

Although I was ready, I didn't take HCC section of old qualifier. I was hoping the new qualifier would be much interesting. Fortunately it became true. The new qualifier is not only more interesting than the old one, but also much better as an assessment for PhD student.

Fall 2012

- Took two courses. GPA for this semester is 3.5, which makes cumulative GPA 3.38
    - CS424 Visualization and Visual Analytics I (A)
    - CS525 Human Computer Interaction (B)
- Teaching Assisted 2 courses, 25% each
    - CS401 Computer Algorithm I, under Dr. Sevag Gharibian.
        - Graded assignments and exams
        - Gave a lecture when Dr. Gharibian is not in town.
    - CS202 Data Structure and Discrete Mathematics II, under Prof. Tanya Berger-Wolf
        - Graded assignments and exams
        - Lead a review session every week
- Lab activities:
    - Attended tech meetings in EVL several times
    - Did a survey on current text-messaging APIs in the market
    - Attended Project Asthma meetings
    - Reading some papers, not many

The summer of 2012 was a difficult time. Being free from the intense course work, I had much time to think about my next move. But it was too late. Part of me believed it was best for me to do something profitable for my PhD study. But at that time, being here for nine month, I still had no connection with the lab I would like to be in. I didn't even talked to my advisor a lot. There was no way for me to suddenly appear in EVL and start working there. I figured out I need to get in the lab as soon as possible.

Then my wife came to Chicago in June and she didn't feel good. So I stopped worrying about my progress in the program and spent sometime visiting interesting places in Chicago during the summer.

"Forget about distant care, deal with near sorrow first." Fortunately things got better when the summer ended.

In order to win the battle of getting an A, I started to learn background knowledge for cs424 in mid August, so that I could have a good start in project 1. Thanks to the early start, countless overnight work, good teammates and good wife, I made it. It was the single best moment since I am here when I saw an A in the final grade sheet. The second best moment was when seeing the grade of project 4. I knew I would get an A. I gained more confidence than ever. "I'm not afraid any more. I can pick up any tools or techniques real quick. I can fulfill whatever job I'm assigned. It is time to ask for assignment in the lab".

In fact, I've assigned something to do in EVL this semester, but I'd rather not consider that as a 'real' project. The job was to do a survey on text-messaging APIs. I was satisfied with most of the work I did except for the presentation. Although I was not afraid of giving presentation after all the project presentations in the courses, which I appreciate a lot, I was still nervous when introducing the result I had. I was not satisfied with the slides I made. I believed there would be a better way to present all the information I collected but I didn't have enough time to figure out how to visualize all those stuff.

WHAT I AM DOING:

- Taking one course. The credits will count as research credits instead of course work credits
  - CS590 Research Method in Computer Science
- Teaching Assisting 2 courses, 25% each
  - CS201 Data Structure and Discrete Mathematics I, under Prof. Mitchell Theys
    - Prepare and grade assignments
    - Grade projects
    - Lead a review session every week
  - CS422 User Interface Design and Programming, under Prof. Luc Renambot
    - Collect homework and projects
    - Lead a session every week or two weeks
  - Lab activities:
    - Attend tech meetings and CAVE2 meetings in EVL
    - Integrate osgBullet, a library that allows using Bullet, a physics simulation library in OpenSceneGraph, an open source 3D graphics library, to omegaLib, a middleware used to write applications for SAGE or CAVE2 or other environment
    - Reading papers purposelessly, preparing for WCP qualifier

I'm currently trying to integrate osgBullet into omegaLib. OsgBullet is a set of software tools for applications that use both OpenSceneGraph (OSG) and Bullet. It integrates OSG, Bullet and osgWorks. The OpenSceneGraph is an open source high performance 3D graphics toolkit; the Bullet Physics Library provides state of the art collision detection, soft body and rigid body dynamics; osgWorks is a set of applications and software tools that add capability for OSG. OmegaLib has integrated OSG and osgWorks.

I have learned fundamental of Bullet, OSG, osgBullet and omegaLib, and created a simple osgBullet example in omegaLib. As of March 28th, I am still working on modify CMake files for omegaLib to allow compilation of this example. Once this is done, I will try to run the example app. If it can work properly, I will finish my work by making real modifications in CMake files for omegaLib to include all necessary configuration steps so that people don't need to manually add these dependencies every time.

Meanwhile, I am also reading papers and trying to make some notes for future use. My goal is to read two to three papers every week, including reading in detail for one of them. If the papers I read for cs590 count, I am well in the schedule. If without those papers, I am a little slower than planned.

WHAT I WILL DO:

This summer:

I know it would be better if I do something this summer on campus. But I have to go back to China for the last time in foreseeable future since I have a wedding to prepare and a honeymoon travel to go. So my plan is to read some papers and do some projects of myself.

Course Work:

Although I have taken enough 400-level courses, I plan to take one more, CS426 Video Game Design and Development, in Spring 2014, which is supposed to be taken this semester but was dropped because of some family issues.

As for 500-level courses, I will take 4 EVL-related courses in the future, including Visualization and Visual Analytics II (cs524), Computer Graphics II (cs526), Computer Animation (cs527) and Virtual Reality (cs528). I need another 500-level course as PhD program required besides these. It would be either Computer Algorithm II (cs501) or Data Mining and Text Mining (cs583).

As of March 27th, the course list for Fall 2013 is, I think, still not finalized. If none of cs524, cs526, cs527 and cs528 were to be offered next semester, I would take cs583 or cs501 instead. Otherwise I would like to take above-mentioned cs52x courses first.

I have no idea when these courses will be offered, thus I do not know when I can acquire all the course work credits required by the program. But it does not matter, at least for now, since I cannot (and will not) wait until before starting doing research for my dissertation.

Funding:

It is a good practice to be a TA, but not an important and urgent practice that will directly affect my PhD progress. I plan to look for financial support in the lab as soon as possible so that I will no longer need to be a TA. If I were not able to find funding in the lab, I would apply for TA again next semester.

Projects & Papers & Research:

I need to read more papers and will do. I prefer not taking the Written Critique and Presentation qualifier before I am totally ready. But well, next year is the hard deadline, so currently I would like to put this milestone as Spring 2014.

I have been thinking about research for some time, but it is difficult to come up with some idea that is really interesting, important and at the same time feasible. So instead blowing up my mind in thinking about ideas ineffectively, I guess the better way is to relax, do some projects, while keeping in touch with the current progress of the community. Maybe some day the idea will come to me.

I don't think I will get my degree in totally five years, which is common in my country and thus requested by many of my family members, especially when I have spent more time than others to make up the deficiency of my background and get ready to start. I am quite sure that in this totally different environment where people basically needs to move all by my own and needs to get some real job done to graduate, I know I need 1) be patient and 2) keep moving. Both are important.