IEICE Global Plaza

—Monthly community plaza in English for students, faculties and engineers—

Essay

◆◆◆ *Voice of Students* ◆◆◆

From Studentship to an Academic Career

Marat Zhanikeev Prof. Yoshiaki Tanaka's Laboratory, Global Information and Telecommunication Institute, Waseda University (from Uzbekistan)

This article is addressed to foreign students or researchers who are studying or trying to study in Japan, from my experience. Most of you who glanced over it, I think, must be prospective students looking for or already in a graduate program in Japan. As a scholar who walked that path before, I can share some of my personal insights about what you can expect both during your graduate program and after it. As shown in Fig. 1, your academic journey can be split into 3 legs, with ability to leave at each intersection :

–2 years for graduate program ;

–normally 3 years for your post–graduate program resulting for a PhD degree ;

–the rest of your life for your further academic career.

Here, I will focus mostly on the graduate program, but, given that I am currently at a further point in my own academic career, I would also like to share with each of you what should be expected after you graduated and got your master degree. This must be important because I think Japan is a very good country for post–graduate academic lives.

I came to Japan and, specifically, to Graduate School of Global Information and Telecommunication Studies (GITS), Waseda University (*http://www.gits.waseda.ac.jp/*), in 2001, for the fall semester. I had only about 20 days to get used to life in Tokyo and then the semester started. The rules for the graduate program in GITS were not so difficult. Anyone had to get 30 credits to graduate. As a result of most classes with 2 credits and few classes with 4 credits, I had to take about 10 classes. I packed most of them into 2 semesters and basically completed by the end of the first year.

In a broad prospective, there are 2 extreme approaches to most graduate programs. One is to make students take many classes and do little research, and another is to minimize class load but expect students to produce substantial research results. Obviously, the second extreme approach implies that the students have plenty of free time for research. This free time is crucial for graduate schools with a wide spread of scientific backgrounds across students.

GITS admits both Japanese and foreign students which create a healthy mixture of cultures and scientific backgrounds. The undergraduate level education generally depends on each of countries including Japan and the other various countries. This is the reason why the free time is crucial for the students to reduce the difference and bring themselves up to a relatively similar level.

The Tanaka–Lab where I belong also has a system for coping with the knowledge spread in admitted students (See it at *http://www.tanaka.giti.waseda.ac.jp*). Our Lab splits up research activities into teams, where each team is led by a PhD student or higher one. While all the topics are in the general area of networking, each team works on a set of specific problems. For example, Tanaka–Lab has a team on *network performance and traffic*, a separate team on *optical networks*, and yet another team on *pricing research*. Each area has many currently unsolved problems, which are assigned to new intakes. This scheme saves each student from the difficulties of looking for a brand new topic, which must be quite difficult in the world of increasing complexity.

The research activities are split into trimesters starting from the second one. They should result in a tangible outcome in each trimester. In Tanaka–Lab, this outcome is simply a paper presented at a local or/and international conference. So, graduate students do not have any other option for publication, they must publish their outcomes. A nice side effect from those publications is that master theses can be quickly written by gluing all publications together.

As I mentioned before, GITS offers both extremes in separate programs. So, aside from the research program which gives students lots of free time, there is also an inter–disciplinary program, where students have to take more courses but do less research.

Once you have graduated and had your master degree, next issue is that you should consider continuing your education in Japan. One very good reason is that the scientific research in Japan has several dozen years of history and is very mature today. The PhD program in GITS requires a PhD student to publish 2 peer–reviewed journal level papers to graduate and get the degree.

If you continue on to your PhD, you will probably join an organization that specializes in your research area. The scientific research in Japan is very mature and is comparable to both Europe and US in intensity of research activities. The research activities are conducted by various research institutions. One of the biggest organizations in Japan is the Institute of Electronics, Information and Communication Engineers (IEICE), which covers all networking research and

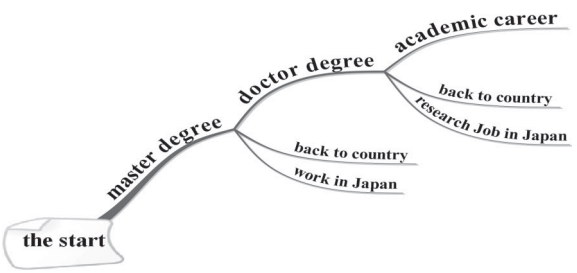

Fig. 1 The tree of all possible paths available for embarking on the pursuit of a graduate degree.

Fig. 2 A tutorial by the author on Active and Passive Network Performance Measurement at NOMS 2010 in April 2010.

beyond as well.

They have an overwhelming number of Technical Committees in IEICE. Basically, all current hot research topics are covered. Some examples of Technical Committees are *Network System*, *Information Network*, *Information and Communication Management*, *Communication Quality*, and others. Most of those committees monthly or by-monthly hold research seminars and plenty of activities are available at all times. Consequently, we always heve a chance to publish current research results at one of those meetings. One positive side effect of those seminars is the wide coverage of locations. Japan has a very good network of domestic transport network including airports, which makes it easy for anyone to join a small-scale conference basically at any city in Japan. This is exactly what happens-most of seminars never repeat the same city as the venue in 2-3 years.

Japan is also often picked as a venue for international conferences. Several international conferences are held each year in Japan even in the area of networking. The other areas have plenty of their own conferences.

Now, there is a wide spectrum of form in which you can make your contribution to a local or an international academic event. For example, in Fig. 2, I delivered a tutorial at one of high-level international conferences which was held in Osaka in April last year.

When you finally graduated and received your PhD degree, you can consider to further study and have a fully academic career. At least, this was my choice in 2007. The decision for me was simple. When I graduated from GITS' graduate program, I enrolled in the PhD course because I felt my research was incomplete. When I got my PhD, I found myself located at the same situation, again, so, the choice to continue my academic career to next logical step for me. Now, I serve the university as an assistant professor. Of course, the academic career means that you will have to land a job with one of the universities in Japan. However, in some academic career they rarely have just one affiliation.

Remember if you have ever joined IEICE's Technical Committees during your PhD? It is likely that while your main affiliation is the university which would hire you, there is a good chance that you will also be strongly affiliated with a Technical Committee, especially organizing regular international conferences. If that happens, one day you may be put in charge of organizing an international conference. For example, Fig. 3 is one of the pictures I took on a trip to Jeju, Korea, where I was involved in organizing an international conference. Thus, I hope this essay will help you in your own future academic life.

Fig. 3 Planning the floor for APNOMS 2009 in Jeju, Korea, 3 months ahead of the conference.

Upcoming International Conferences

CJMW2011-IEICE Communications Soc., 2011 China-Japan Joint Microwave Conference, in Hangzhou, China on April 20-22, 2011, *http://www.emfield.org/cjmw2011/index.php*.

CrownCom2011-ICST/IEICE Communications Soc. /others, 6th International ICST Conference on Cognitive Radio Oriented Wireless Networks, in Yokohama, Japan, on May 31-June 3, 2011, *http://www.crowncom.org/2011*.

ICC2011-IEEE/IEEE-Communications Soc. /IEICE Communications Soc/Science Council of Japan. IEEE International Conference on Communications, in Kyoto, Japan on June 5-9, 2011. *http://www.ieee-icc.org/index.php*.

TJMW2011-IEICE Electronics Soc., Thailand-Japan Microwave 2011, at King Mongkut's Institute of Technology Ladkrabang, Thailand, on August 3-5, 2011

ICDV2011-IEICE Electronics Soc., Integrated Circuits and Devices in Vietnam 2011, in Hanoi, Vietnam, on August 8-10, 2011, *http://www.uet.vnu.edu.vn/icdv2011*.

TWHM2011-IEICE Electronics Soc/Technical Committee on Electron Device, 2011 Topical Workshop on Heterostructure Microelectronics, in Gifu, Japan on August 28-31, 2011, *http://www.twhm.net/*.

NOLTA2011-IEICE Engineering Sciences Soc., in Kobe, Japan, on September 4-7, 2011, *http://nolta2011.org/*

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