Making the Transition from Industry Lab to Academia

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Background

- B.B.A, Information Management, National Taiwan University
- MS and Ph.D., Computer Science & Engineering, University of Michigan, Ann Arbor
  - Advisor: Prof. Jason Flinn
  - Thesis title: Replication-based Cyber Foragnig and Automated Configuration Management
- Two years of industry research experience at NEC Labs America in Princeton, New Jersey
- Assistant professor at NTU CSIE since August 2010
Current research projects

• Cloud computing
  • Performance prediction, debugging, and service selection for clients
  • Dynamically pulling cloud resources to cloud burst tasks
  • Pricing: collaboration with professors from business school

• Mobile computing
  • Leverage everyday smart phones for bike tracking
  • Performance debugging for smart phones
Outline

• Things that I find useful
  • New faculty orientation
  • Reduced course workload
  • Startup funding
  • Funding support from colleagues
  • Mentoring

• Things that caught me by surprise
  • Managing budget
  • How to be an advisor
  • How to be a teacher
  • Building connections with industry
New faculty orientation

• Three-day retreat at NTU experimental forest
  • Organized by NTU Center for teaching and learning development

• Goals:
  • Familiarize new faculty members with teaching and funding resources on campus
  • Connect with senior faculty members and fellow newbies
Reduced course load

- In Taiwan, the Ministry of Education requires a teaching load of at least 9 credit per semester.

- The college considers advising students as teaching load.
  - On average, three courses each year.

- Our department: reduced course load for first year to 2.
Startup funding

- Internal funding: university, college, and department

- National Science Foundation (similar to NSF) provides a rolling based proposal review for startup proposals
Collaboration with colleagues

• Our department: senior faculty members invite us to collaborate in joint proposals and projects
  • Additional funding
  • Great opportunity to find collaborators
  • Showcase research
  • Make connections with industry
Importance of mentoring

- Having mentors provides tremendous help.
- University offers mentoring program.
- Informal ways to connect to senior faculty members.
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Managing funding

• Accounting and procurement process is more complicated than expected. e.g.,
  • The process of filing expenses
  • The process to purchase special equipment
  • Inflexibility in how money can be spent

• Solutions:
  • Having an assistant is tremendous help
  • Plan ahead in purchasing equipment
Being an advisor

• Being a faculty is more like a manager (even though we are hired based on research results)
  • Hire the best people
  • Find resources
  • Manage budget

• Most challenging: how to build up a team?
  • Effective recruiting
  • Mentoring, training, and motivating students
  • Adjusting to cultural differences
Being a teacher

- It takes longer than expected to develop a new class
  - Lecture material
  - Homework assignments
  - Exam questions

- Finding effective ways to teach
  - Students do fall asleep in class
  - Students know more (or less) than your expectation
Building connections with industry

• Validating research results is important

• Finding interesting problems in real world

• Sending students for internship to build collaboration
Acknowledgement

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Thank you!