Career Development for Engineering Research

Speaker: Prof. Xiaofang Zhou
Host: Prof. Nevin L. Zhang

HKUST CSE Seminar
Oct 10, 2022

Prof. Nevin L. Zhang

Professor, CSE Dept.

Biography

Dr. Nevin L. Zhang is a full Professor at the Department of Computer Science and Engineering, The Hong Kong University of Science and Technology. He received his BSc degree in Applied Math at University of Electronic Science and Technology of China in 1983, MSc degree in Applied Math at Beijing Normal University in 1986, PhD in Applied Math at Beijing Normal University in 1989, and PhD in Computer Science at University of British Columbia in 1994.

Research Interests

Prof. Zhang's research interests include latent tree models, multidimensional clustering, hierarchical topic detection, deep probabilistic models, patient clustering and classification for traditional Chinese medicine. He is an Associate Editor of Artificial Intelligence Journal and International Journal of Approximate Reasoning (IJAR).

Prof. Xiaofang Zhou

Head & Chair Professor, CSE Dept.

Biography

Prof. Xiaofang Zhou is Otto Poon Professor of Engineering and Chair Professor at the Department of Computer Science and Engineering (CSE), The Hong Kong University of Science and Technology (HKUST). He received his BSc and MSc degrees in Computer Science from Nanjing University in 1984 and 1987 respectively, and PhD in Computer Science from University of Queensland (UQ) in 1994. From 1994 to 1999, he worked as a Senior Research Scientist in Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia, leading its Spatial Information Systems group. He joined University of Queensland in 1999 and became a Professor of Computer Science in 2004. From 2006 to 2020, he was Head of UQ Data and Knowledge Engineering (DKE) research group and Data Science discipline.

Research Interests

Spatiotemporal and multimedia databases; Data mining; Data quality management; Big data analytics; Machine learning

Panelists

Chair Professor
Dit-Yan Yeung

Research Focus
· Computational and statistical approaches to machine learning and artificial intelligence
· Applications in computer vision, education, earth science

Professor
Shing-Chi Cheung

Research Focus
· Crowd computing
· Cybersecurity
· End-user software engineering
· Generative programming
· Open-source software
· Program analysis
· Software engineering

Professor
Gary Chan

Research Focus
· Smart sensing and IoT
· Cloud and fog/edge AI
· Indoor positioning and mobile computing
· Video/user/data analytics and mining
· IT entrepreneurship and technology transfer

Doctor
Wei Wang

Research Focus
· Big data
· Parallel and distributed systems
· Cloud computing
· Computer networking

Doctor
Lionel Parreaux

Research Focus
· Type system
· Compiler optimization
· Metaprogramming
· Functional programming
· Domain-specific language

Outline

I. Research Studies in PhD Life
- Paper Reading
- Idea Brainstorming
- Stress Management
- Entrepreneurship & Knowledge Transfer

II. Research Careers after PhD
- Postdoc/AP Position Choosing
- Research Fields Changing
- Other Issues Influencing Career Development

III. Industrial Careers after PhD
- Company choosing and adaptation
- The switch between industry and academia

**Part I
Research Studies in PhD Life**

How to better …
- Read papers
- Brainstorm research ideas
- Deal with stress

Research Studies in PhD Life (1/3)

❖ **Read papers**

- How to choose papers to read?
- How to digest/skim papers?
- As a beginner, it is hard to understand many papers. How can I improve my reading speed?

❖ **Brainstorm ideas**

- How to choose a research directions?
- How to generate research ideas?
- How to evaluate an idea?

Research Studies in PhD Life (2/3)

❖ **Deal with stress**

- What is a better attitude towards a paper rejection? What if I cannot publish any paper in my PhD journey?
- What if I lose passion about my research topic?
- How can I help my peers under stress?
- What are the initial patterns of burnout?
- What if I am incompatible with my mentor's personality but I am interested in his research?

Research Studies in PhD Life (3/3)

❖ **Entrepreneurship & Knowledge Transfer**

- How can I cultivate my entrepreneurship? What are the benefits if I only want to work in the academia?
- How to evaluate the industrial value of my invention?
- Can I build a startup company myself? Should I seize the chance to apply for hedge funds?
- Where can I seek help to keep my company running?

Part II
Research Studies after PhD

How to better …
- Seek research jobs
- Change my research field(s)
- Deal with misc. issues

Research Studies after PhD (1/2)

❖ **Seek research jobs**
- How to prepare to apply for postdoc/AP positions? In addition to high-quality publications, what should I pay attention to?
- What are the differences between research institutes in the mainland and overseas? What are the ideal career path?
- What matters more? Research projects or university tiers?

❖ **Change research field(s)**
- How should I weight and make decision if I would like to conduct multidisciplinary studies in an entirely new field to me?
- What are the skills & experiences to demonstrate if I would like to launch a research job in another field?

Research Studies after PhD (2/2)

❖ **Other issues...**
- What if I cannot find a good position in mainland but a nice one overseas? How should I decide? What are the major factors to weight?
- If I stay abroad for a long while, how about my family?
- Any cases to share?

**Part III
Industrial Careers after PhD**

How to better ...
- Choose a company
- Switch my mindset and adapt to the industry

Industrial Careers after PhD

❖ **Choose a company**
- What factors to consider when choosing a company?
- What skills/experiences does a company normally value?

❖ **Switch the mindset**
- What are the differences between the mindset in the academia and the industry?
- What are the pros & cons working in the industry?
- What to do if I want to return to the academia?

Thank you!
Wish you all the best!

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