



THE DEPARTMENT OF
**COMPUTER SCIENCE &
ENGINEERING**
計算機科學及工程學系

**Recruiting, Cultivating, and Retaining
Talented Academic Researchers: *The
Case of the Computer Science and
Engineering Department at HKUST***

**Mounir Hamdi
Department Head**



Hong Kong University of Science and Technology

- Established in 1991 by the Hong Kong Government as a **Research-Intensive** American-style University
 - It has four Schools (ALL BSc, MSc, MPhil, PhD)
 - School of Business
 - School of Engineering
 - School of Science
 - School of Humanities and Social Science
 - Institute of Advanced Studies
 - 9 Research Institutes
 - 43 Research Centers
 - It has around 500 faculty members, 100% with PhDs
 - It has around 6000 undergraduate students
 - It has around 4000 graduate students



Hong Kong University of Science and Technology



Hong Kong University of Science and Technology





The Department of Computer Science and Engineering



CSE Faculty



Faculty and Teaching Staff

Category	Sub-category	Overall Size
Tenure-track Faculty	<ul style="list-style-type: none"> ➤ 3 Chair Professors ➤ 20 professors ➤ 12 Associate Professors ➤ 8 Assistant Professors 	41
Visiting Faculty	<ul style="list-style-type: none"> ➤ 2 Professors ➤ 2 Assistant Professors 	2-3
Adjunct Faculty	<ul style="list-style-type: none"> ➤ 6 Professors 	7
Emeritus Faculty	<ul style="list-style-type: none"> ➤ 3 Emeritus Professors 	3
Junior Teaching Staff	<ul style="list-style-type: none"> ➤ 3 Teaching Associates ➤ 7 Instructor Assistants ➤ 3 Communication Tutors 	13
Administration and Technical Staff	<ul style="list-style-type: none"> ➤ 10 Admin Staff ➤ 8 Technical Staff 	18



Students (Around 900)

Category	Sub-category	Overall size
Undergraduate Programs	➤ BEng in Computer Science	➤ 355
	➤ BEng in Computer Science (Information Engineering)	➤ 43
	➤ BSc in Computer Science	➤ 21
Multi-disciplinary Undergraduate Programs	➤ BEng in Computer Engineering (<i>Shared with the Department of Electronic and Computer Engineering</i>)	➤ 285
	➤ BSc in Risk Management and Business Intelligence (<i>Shared with the Department of Mathematics and the Department of Information Systems</i>)	➤ 30
Postgraduate Research Programs	➤ PhD in Computer Science and Engineering	➤ 130
	➤ MPhil in Computer Science and Engineering	➤ 56
Postgraduate taught Programs	➤ MSc in Information Technology	➤ Full-time: 55
		➤ Part-time: 98



Faculty Accomplishments

- **Teaching**
- **Research**
 - Publications
 - Citations
 - Grants
- **Professional Service**
 - Editorial Board
 - Conference Chairmanships



Teaching Accomplishments



CSE Teaching Quality

- **2 University-wide Teaching Awards**
 - **Given to just one Professor per year**
- **6 top-10 Lecturers Awards (voting by students)**
 - **Given to 10 Professors per year**
- **Many Distinguished Engineering Teaching Awards**
- **Many Teaching Innovation Awards**



Faculty Research Standing in the **World**



Faculty Research areas

Faculty Member	Artificial Intelligence	Data, Knowledge and Info. Mgt	Net & Computer Systems	Software Technologies	Theo. Computer Science	Vision and Graphics
ARYA, Sunil						
BENSAOU, Brahim						
CHAN Gary						
CHEN, Lei						
CHENG, Siu-Wing						
CHEUNG, SC						
Chin Roland						
CHUNG Albert						
DING Cunsheng						
Golin Moredecai						
Gu Lin						
Gu Zonghua						
Hamdi Mounir						
Horner Andrew						
Kwok James						
Lee Dik						
Li Bo						
Lin Fangzhen						
Liu Yunhao						
Lockovsky Fred						
Luo Qiong						
Mak Brian						
Muppala Jogesh						
NG Wilfred						
Ni Lionel						
Papadias DIMITRIS						
Pong TC						
Qu Huamin						
Quan Long						
Sander Pedro						
Shen Helen						
Shen Vincent						
Tai Chew Lan						
Tang CK						
Wong Raymond						
Wu Dekai						
Yang Qiang						
Yeung DY						
Yi Ke						
Zhang Charles						
Zhang Newin						
Zhang Qian						



Academic Excellence: Number of Publications in the Past 5 Years

- **IEEE Transactions on Knowledge and Data Engineering**
(**HKUST**, IBM, NUS, UIUC, Purdue)
- **IEEE Transactions on Parallel and Distributed Systems**
(**HKUST**, USC, UTA, GTech, Purdue)
- **IEEE Journal on Selected Areas in Communications**
(MIT, **HKUST**, UIUC, Waterloo, Stanford)
- **ACM Transactions on Sensor Networks**
(NCSU, USC, MIT, **HKUST**, Simon Fraser)
- **ACM Transactions on Database Systems**
(Maryland, IBM, UIUC, **HKUST**, Microsoft)

Ranked #1

Ranked #1

Ranked #2

Ranked #4

Ranked #4



Academic Excellence: Number of Publications in the Past 5 Years

- Journal of the Audio Engineering Society

(Helsinki, Philips Res Lab, Nokia, **HKUST**, Cambridge)

Ranked #4

- Information Systems

(CityU, Roma, Eindhoven U, Purdue, **HKUST**)

Ranked #5

- IEEE Transactions on Multimedia Systems

(Microsoft, Res Lab, CUHK, UIUC, ..., **HKUST**)

Ranked #8

- IEEE Network

(UTA, UC-Davis, UCL, Columbia, ..., **HKUST**)

Ranked #10

- IEEE Transactions on PAMI

(Maryland, CMU, UIUC, Siemens, ..., **HKUST**)

Ranked #10



Academic Excellence: Number of Publications in the Past 5 Years

CSE faculty Member	Ranking Worldwide
Qian Zhang (IEEE Journal on Selected Areas in Communications)	1
Yunhao Liu (IEEE Transactions on Parallel and Distributed Computing)	2
Lionel Ni (IEEE Transactions on Parallel and Distributed Computing)	3
Dimitris Papadias (IEEE Trans. on Knowledge and Data Engineering)	3
Andrew Horner (Journal of the Audio Engineering Society)	5
Nevin Zhang (Journal of AI Research)	5
CK Tang (IEEE Transactions on PAMI)	5
Bo LI (IEEE Journal on Selected Areas in Communications)	6
Qiang Yang (IEEE Transactions on Knowledge and Data Engineering)	6
Ding Cunsheng (Designs, Codes and Cryptography)	7



Faculty Research Citations (up to May 2010)

Research Area	Number of citations	Average citation per CSE Faculty
Artificial Intelligence	12700	1590
Data, Knowledge and Information Management	10900	
Networking and Computer Systems	21300	
Software Technologies	3100	
Theoretical Computer Science	5200	
Vision and Graphics	9900	



International Professional Service (Within the Past 3 years)

Journal Editorships by CSE Faculty	International Conference Chairmanships CSE Faculty
54	65



We have a strong Research Funding

- High success rate in competitive funding in Hong Kong (GRF), China, and USA
- Numerous Industry/Research Projects
 - Microsoft, Huawei, Boeing, NEC, Alcatel, Nokia, Google, ZTE, STM, ITF, ...



Ranking Provided by the Academic Ranking of World Universities (ARWU), (2 months ago)

- Overall Ranking: **26** in the World
- Asia Ranking **1**
- Papers published in **9** in the World

Top 20% of CS Journals

<http://www.arwu.org/SubjectCS2010.jsp>



Reasons for this Success



Reasons for this Success

- Recruitment Talent
- Nurturing Talent
- Keeping Talent



Recruiting Talent

- **We need to have a comprehensive and Informative Web site (The first thing candidates look at)**
- **Advertise everywhere**
 - **ACM, IEEE, The Chronicle of Higher Education; Computing Research Association, etc.**
 - **More targeted on-line web sites**
- **Advertize in International Conferences**
 - **Flyers in Conferences**
 - **Talking to potential candidates during Conferences**



Recruiting Talent

- **Recruitment Trips**
 - To screen a large number of candidates, we make recruitment trips to USA, Europe, etc.
 - It is more cost-effective and a good way to shorten the list of invitations
- **Special Contacts**
 - Contact specific abs
 - Visit specific labs



Recruiting Talent

- **Recruitment Interviews**
 - **Set up a welcoming and comprehensive visit for the candidate**
 - **All faculty need to be involved**
 - **All Department and University achievements and facilities need to be shown**
 - **Hospitality must be shown**



Recruiting Talent

- **Recruitment Interviews**

- **The expectation from the candidate should be made very clear**
 - ✓ **Financial package – must be very competitive depending on qualifications**
 - ✓ **Regulations and rules should be very clear**
- **Follow up with candidates after the interview**
 - ✓ **Phone calls and email even if you do not intend to hire the candidate**
 - ✓ **In case of an offer, be very quick**



Cultivating and Nurturing Talent

- **Be very supportive early on:**
 - **Have a mentor colleague to junior faculty**
 - **Give a generous startup package (Students, Trips, and equipment)**
 - **Ease the integration within the Department**
 - **Teaching/admin relief the first year to be give them time to build their research and get accustomed to the new environment**
 - **Teaching workshops**
 - **Make them feel respected and needed**



Cultivating and Nurturing Talent

- **Be very supportive early on:**
 - **Give additional help in case of disappointing results**
 - ✓ **Teaching**
 - ✓ **Research grants**
 - **Have regular meetings with Department Head, and have an open door policy**
 - **Remove hierarchy – everybody is equally important irrespective of rank**



Cultivating and Nurturing Talent

- **Promote Quality:**

- **Emphasize that we look for quality and impact**
 - ✓ **Publication in top journals and conferences**
- **Annual reviews by Department Head and Department Committee**
- **Annual merit rewards**
 - ✓ **Teaching**
 - ✓ **Research**
 - ✓ **Salary**



Retaining Talent

- **Key:** Building a professional environment where people can grow and thrive
- Diversity is very beneficial
- Promotion policies are very clear (Research, teaching, and service) with checks and balances
 - Department Head and Committee
 - Dean and School/College Committee
 - VPAA and University Committee
 - President
 - External referees (some recommended by the candidate)



Retaining Talent

- Build a friendly professional environment (many professional and social events)
- Transparency and fairness are **ESSENTIAL**
- The reward (and sticks) system is very clear
- Regular Department meeting and Department retreats so that everyone has an **OWNERSHIP** of the Department
- Advances in professional status and salary that are competitive
- Upgrade equipment when needed



Conclusion

- **Recruitment of Talent**

- Spend time and effort and it will pay off in the end
- Present clear and true status and strategic plans to the candidate

- **Cultivating Talent**

- Be very supportive early on, and it will pay off later on

- **Retaining Talent**

- Build a diverse environment where talent can grow and thrive (then they will not be looking elsewhere)
- Ownership, transparency, and fairness is a must



Thank You

