SMU PhD IN INFORMATION SYSTEMS
Technology and management research for real-world impact
Aims of Programme

Mission

The Singapore Management University (SMU) offers the PhD in Information Systems programme. The programme produces PhD graduates with expertise that straddle between Information Technology (IT) and business sectors for Research and Development (R&D) units and applied academic institutions.

Goal

The programme aims to develop researchers and educators who address deep technology challenges in real information systems that impact business processes or management, or who develop tools and methodologies to translate business goals to technological solutions. Our PhD graduates will be capable of collaborating with faculty members from different research areas, designing technological solutions for real-world problems and applications, while still producing top-rated academic publications.

Our Value Proposition

Interdisciplinary Work

Our PhD students are trained to work across research areas. The curriculum covers five areas that have high market demands – Data Management & Analytics; Information Security & Trust; Information Systems & Management; Intelligent Systems & Decision Analytics; and Software Systems.

Applied Research

The programme provides opportunities for students to work with industry data sets and commercial platforms. Students will learn to conduct their research in the context of real information systems and business goals.

Industry-relevant Training

Our PhD students will acquire professional skills that are important in industrial R&D, such as intellectual property management. Students will have opportunities to network with academic researchers and industry practitioners.

Employment Prospects of Graduates

R&D units require PhD graduates with an integrated view of business and IT to complement graduates from other institutions who are trained to work on component technologies.

Academic institutions, particularly software schools, require PhD graduates with application and systems building, as well as management skills.

Industry requires PhD graduates with the skill to develop tools and methodologies to translate business goals into technology requirements, and also to build technology-based solutions that contribute to revenue growth or cost reduction.
**Students' Achievements**

**Distinguished / Best Paper Awards**

<table>
<thead>
<tr>
<th>Award Type</th>
<th>Author(s)</th>
<th>Conference/Event</th>
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</thead>
<tbody>
<tr>
<td>Distinguished Paper Award</td>
<td>Qiang Yan, Jin Han</td>
<td>Network and Distributed System Security (NDSS) Symposium</td>
</tr>
<tr>
<td>Best Workshop Paper Award</td>
<td>Kiat Wee Tan</td>
<td>Special Interest Group on Data Communication (SIGCOMM)</td>
</tr>
<tr>
<td>Best Paper Award</td>
<td>Chee Meng Tey</td>
<td>Network and Distributed System Security (NDSS) Symposium</td>
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**In the headlines**

**TODAY, 3 Oct 2013**

A*Star, SMU researchers first to discover iOS security flaws

**Lianhe Zaobao, 3 Oct 2013**

Local researchers found three security weaknesses in Apple’s iOS operating system *(Translated)*

**The Straits Times, 2 Oct 2013**

Apple fixes iOS7 after Singapore researchers identify flaws

**Selected Graduates’ Professional Appointments after SMU**

<table>
<thead>
<tr>
<th>Position</th>
<th>Institution/Company</th>
<th>Location</th>
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<tbody>
<tr>
<td>Post-Doctoral Fellow</td>
<td>Carnegie Mellon CyLab</td>
<td>United States of America</td>
</tr>
<tr>
<td>Research Engineer</td>
<td>Google Switzerland GmbH</td>
<td></td>
</tr>
<tr>
<td>Research Scientist</td>
<td>Business Analytics Translational Centre</td>
<td></td>
</tr>
<tr>
<td>Research Engineer</td>
<td>Twitter Inc.</td>
<td>United States of America</td>
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</table>
Areas of Research Concentration

**Curriculum Structure**

This is a direct PhD programme, with a maximum candidature period of five years for full-time students. The curriculum comprises coursework (12 Course Units) in addition to a dissertation (28 Course Units).

**Graduate Coursework:** In the first two years of study, students will enrol in intensive courses to build their research depth and breadth, as well as professional skills.

**Depth Requirements:** Students will enrol in the advanced course in the primary area and undertake research apprenticeship with their primary advisors. Each advanced course covers important research papers on key topics and techniques that students need to be acquainted with in order to carry out research in an area.

**Breadth Requirements:** Students will attend courses in the five areas of research concentration shown above. These requirements are intended to help the PhD students to establish their networks and to expose them to industry practices. In addition, students will attend the advanced course in one of the breadth areas.

**Professional Skills:** To round up the PhD training, the curriculum includes workshops on Information System Research Methodology; Intellectual Property Management; and Research Writing and Presentation.
At HPLabs, I was part of the Social Computing Group managed by Bernardo Huberman. I was asked to propose a research project that will benefit the business objectives of HPLabs based on stipulated requirements. I undertook the research project by writing computer programmes and performing experiments to verify the research results. When I presented my findings to HPLabs, they found my results useful and are considering taking the project to the next stage. The company is currently filing a patent for my work. Although the internship was for a short three months, I consider the delivery of results in this span of time a great achievement! The internship helped me gain experience in independent research and will definitely be useful to me in the future.

Students on the programme have also attended internships at:

- Yahoo! Research Lab (Barcelona, Spain)
- IBM Research Lab (New Delhi, India)

Overseas Training Residencies (LARC-CMU exchange)

Since 2011, SMU, in collaboration with Carnegie Mellon University (CMU) through the SMU Living Analytics Research Centre (LARC, http://larc.smu.edu.sg), provides our students with overseas training residencies. Selected PhD students from any of SMU’s PhD programmes may spend up to ten months at CMU. The research work of these students is directly linked to LARC projects, and they conduct their dissertation research on these projects under the joint supervision of SMU and CMU faculty.

Apart from the knowledge and research experience which I gained during my PhD studies at SMU, I will always be thankful to the faculty from the School of Information Systems (SIS) as well as the people I have worked with for their sharing and cultivation.

Firstly, sharing was instilled in me throughout my PhD studies at SIS. There was always sharing of thoughts through classroom presentations; sharing of work with your team members while collaborating on different projects; sharing of knowledge with undergraduates while undertaking Teaching Assistantships; and sharing of research through publications.

Secondly, cultivation – this was a slow but gradual process where one must sacrifice quite a lot. I believe that one day this cultivation will meet success. I had always focused on the shortcomings and ‘less than perfect ideas’ of others but never took time to examine myself seriously. Whether one is right or wrong, one should always examine oneself. This came to me through my constant discussion with some of the great folks whom I have worked with during my stay at SMU and through SMU LARC’s overseas training residency at CMU. Accepting your limitations upfront is always the best way to approach a decision that you make. It is all about looking at yourself… and I am still learning.
Before entering the School of Information Systems (SIS) at SMU, I was just an undergraduate who knew nothing but coding. After more than 4 years in the SMU PhD in Information Systems programme, I received an enriching research experience. The programme not only made me become an independent Information Systems (IS) security researcher with high-quality publications, but it also enriched me in many other ways like enhancing my English communication skills and broadening my knowledge base on other IS areas. These valuable experiences and skills finally helped me find a dream job in one of the top IT companies.

Coming to SMU’s School of Information Systems (SIS) to pursue my PhD was one of the most important decisions I have made and I am glad that I did. The years spent at SIS have taught me as much about life as it has about research. Every person I met is an amazing teacher whom I have learnt a lot from. It is where I have made long-lasting friendships and collaborated with individuals who have inspired, challenged and encouraged me.

There is a saying – ‘To learn with the aim of becoming one’s teacher, to behave with the aim of becoming one’s role model’. At SIS, I am fortunate to meet world-class researchers who are not only role models but professors who truly have a heart for the students. I am so glad I came to SIS and took their classes. Their sharpness and wisdom have made me realise the joy of being a researcher and teacher.

Noi Sian Koh
Lecturer, Business Intelligence & Analytics
School of Information Technology
Nanyang Polytechnic, Singapore

Jin Han
Research Engineer
Twitter Inc.
United States of America

Admission and Application

ADMISSION REQUIREMENTS

At least a good Bachelor’s degree.
A Master’s degree is useful but not required.

Good GRE or GMAT results.
Good TOEFL or IELTS scores.
For applicants whose medium of instruction at the Bachelor’s/ Master’s level was not English.

Submission of the following documents:
Identity Card/Passport
Latest Curriculum Vitae
Degree Certificates and Transcripts
Personal and Research Statements
Recommendation and/or Reference Letters

APPLICATION INFORMATION

The PhD in Information Systems is a full-time programme. The University’s application windows are listed below.

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<tr>
<th>Intake</th>
<th>Opening Date for Application</th>
<th>Closing Date for Application</th>
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<tbody>
<tr>
<td>August</td>
<td>1 November (of prior year)</td>
<td>31 January (of intake year)</td>
</tr>
<tr>
<td>January</td>
<td>1 April (of prior year)</td>
<td>30 June (of prior year)</td>
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Details of programme fees and application procedure can be found at http://smu.sg/phdis
SMU has been designed to provide a different model of university education in Singapore.

Financial Assistance Schemes

SMU awards two types of scholarship on a competitive basis. We assess applicants for different award schemes at the time of admission based on qualification and suitability for these schemes.

SMU SCHOLARSHIPS
The scholarship covers registration and subsidised tuition fees. This scheme also provides successful recipients with monthly living stipends.* The scholarship is renewed yearly, conditioned on good academic performance, for a maximum duration of four years. Beyond the scholarship duration, students who have been on the scholarship may receive continued support through research and teaching assistantships or industry grants.

SMU PRESIDENTIAL DOCTORAL FELLOWSHIP
The SMU Presidential Doctoral Fellowship* is awarded to exceptionally qualified students who are offered candidatures into SMU’s PhD programmes as well as to existing PhD students who are outstanding in their academic performance. The Fellowship is a one-year award that is renewed annually, for up to four years.

* The stipend rates are published on SMU’s postgraduate research programmes’ site at www.smu.edu.sg/pgr and are subject to changes.

A Unique University in Vibrant Singapore

STATE-OF-THE-ART INFRASTRUCTURE
- Small MBA-style seminar rooms.
- Research facilities including proprietary and published databases.
- SMU’s library (for access to many publications and other necessary materials).
- Professional skills development programmes.

Being in the heart of the city, students will have easy access to industry partners who provide research data and validation platforms.

Each School has dedicated personnel to take care of students’ administrative needs. Furthermore, many SMU research centres and institutes provide post-doctoral fellowships and/or research assistantships that add value to students’ research experience.

A STRONG AND INNOVATIVE RESEARCH CULTURE
- Internationally recognised for its world-class research and distinguished teaching conducted by faculty members who joined us from top universities.
- Faculty members collaborating in cross-disciplinary work to generate impactful and real-world relevant ideas, over and above research in their own disciplines.
- Faculty members establishing research centres and institutes to conduct problem-driven research and influence industry practice across a wide range of topics.

A DIFFERENT LEARNING APPROACH
- Students shaping their own syllabuses.
- Faculty members encouraging an interactive learning environment through inquiry, participation and teamwork.
- Seminar-style teaching in small classes for optimal student-instructor interaction.