

Faculty positions in School of Information Science and Technology

The School of Information Science and Technology (SIST) in the newly founded ShanghaiTech University invites highly qualified candidates to fill multiple tenure-track as well as tenured positions as founding faculty members of the school. Candidates should have an exceptional academic record or demonstrate strong potential in frontier research areas of information science and technology or closely related fields.

ShanghaiTech's mission is to become a world-class research university for training future generations of scientists, entrepreneurs, and technological leaders in China. With a state-of-the-art new campus in Zhangjiang High-Tech Park in the cosmopolitan Shanghai, ShanghaiTech is committed to education reform in China by building an open and free academic institution. We offer both undergraduate and graduate degree programs. In addition to establishing and maintaining a world-class research profile, successful candidates are also expected to contribute substantially to the educational missions of undergraduate and graduate programs within SIST. All faculty members in ShanghaiTech will be part of its new tenure-track system commensurate with international practice, evaluation, and standards.

Academic Disciplines:

We seek first-class faculty candidates in all cutting edge areas of Information Science and Technology. Our recruitment focus includes, but is not limited to, the following special research areas: applied mathematics, advanced computer architecture and technologies, nano-

scale and solid state electronics, semi-conductor devices, ultra-high speed and low power circuits, intelligent information and signal processing systems, next-generation computer systems and architectures, operating systems, computational foundations, big data analytics, cloud computing, data mining, artificial intelligence and machine learning, computer vision and graphics, robotics and control, bio-computing, smart energy/power devices and systems, information theory and communications, highly-scalable and multi-service heterogeneous networking, statistics, as well as various inter-disciplinary areas involving the foundation and applications of information science and technology. Candidates in the areas of electronics and optics, integrated circuits, computer systems and architectures, operating systems, software engineering, and robotics will be considered with higher priority.

Qualifications:

- Ph.D. (Electrical Engineering, Computer Engineering, Computer Science, Statistics, Applied Mathematics, or closely related field);

Candidates must demonstrate

- strong track record, strength, and potential in establishing a distinguished academic career in foundational research.

- strong interest in undergraduate and graduate education.

Applications:

Qualified applicants are invited to submit (all in English) a cover letter (Firstname_Lastname_Cover Letter.pdf), a

research and teaching plan (Firstname_Lastname_Research Plan.pdf) up to five pages, the latest curriculum vitae (Firstname_Lastname_CV.pdf), up to three copies of most significant publications (Firstname_Lastname_Paper1-3.pdf), and the names of at least three referees to: sist@shanghaitech.edu.cn.

Mailing Address: School of Information Science and Technology, ShanghaiTech University, Building 8, 319 Yueyang Road, Shanghai 200031, China

Deadline: Until positions are filled.

Compensation and Benefits:

Salary and startup fund are highly competitive, commensurate with experience and academic accomplishment.

ShanghaiTech also offers a comprehensive benefit package to employees and their eligible dependents, including full housing benefits.

For more information, please visit <http://www.shanghaitech.edu.cn>.

Disciplines: Computer Science, Electrical Engineering, Statistics and Optimization, Information Technology, Bioinformatics.

Researcher positions in School of Information Science and Technology

Research Fellow Positions at School of Information Science and Technology (SIST), ShanghaiTech University

The School of Information Science and Technology (SIST) in the newly founded ShanghaiTech University invites highly motivated individuals with a Ph.D. degree to work with us in the following exciting research areas: computer vision, computer graphics, applied mathematics, advanced computer architecture and technologies, nano-scale and solid state electronics, semi-conductor devices, ultra-high speed and low power circuits, intelligent information and signal processing systems, next-generation computer systems, computational foundations, bigdata analytics, data mining, robotics and control, bio-computing, smart energy/power devices and systems, information theory and communications, highly-scalable and multi-service heterogeneous networking, statistics, as well as various inter-disciplinary areas involving the foundation and applications of information science and technology. Please check our PIs' profiles at: <http://sist.shanghaitech.edu.cn>.

Qualifications:

(1) PhD degree in electrical engineering, computer science, applied mathematics or related areas.

(2) Strong publication records.

(3) Strong mathematical skills and system simulation and implementation experience.

(4) Good communication skills and capable of coaching graduate students.

(5) Fluent in English and technical writing.

Applications:

Qualified applicants are invited to submit (all in English) a cover letter (Firstname_Lastname_Cover_Letter.pdf), a latest curriculum vitae (Firstname_Lastname_CV.pdf), copies of up to two representative publications, and two references to: hr-sist@shanghaitech.edu.cn (cc to professors whom you are interested in working with). We provide very competitive salary and benefits for such positions.

Deadline: until the positions are filled.

Discipline: Computer Science, Electrical Engineering, Informatics, Information Technology, Mathematics, Nanotechnology, Postdoctoral, Renewable Energy, Signal Tr.

ShanghaiTech University SIST NEWSLETTER

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School of Information Science and Technology

ShanghaiTech Holds 2015 Inaugural Opening Ceremony



ShanghaiTech held the 2015 Inaugural Opening Ceremony at Zhangjiang campus on September 18th, 2015. In total, 302 undergraduate as well as 386 graduate students joined ShanghaiTech. The deans of the School of Physical Science and Technology (SPST) and School of Information Science and Technology (SIST) introduced all students by presenting each student's name and brief background. The ceremony closed with an inspiring speech titled "Science and education innovation in the information age" by President Jiang Mianheng. He analyzed the opportunities and challenges that ShanghaiTech is facing in an era of information technology development.

Sören Schwertfeger: Finalists for the SSRR 2015 Best Paper Award



The 13th IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR 2015) [1] was held between October 18 and 20, 2015, at Purdue University, West Lafayette, Indiana, USA. Prof. Sören Schwertfeger from the School of Information Science and Technology (SIST) of ShanghaiTech University presented a paper with the title "Using Fiducials for 3D Map Evaluation" [2]. This paper was a finalist for the best paper award of SSRR 2015. [1]_ftn1 <https://robotics.purdue.edu/SSRR2015> [2]_ftn2 <http://robotics.shanghaitech.edu.cn/node/77> and http://robotics.shanghaitech.edu.cn/research/SSRR2015_Dataset

GeekPie Team Wins the First Prize in SegmentFault Hackathon Competition

The SegmentFault Hackathon national competition was held in October, 2015. GeekPie, a team composed of five SIST students, Lv Wentao, Xiong Zhaoping, Yuan Yunzhe, Liu Yonghao and Chen Chen, won the first prize for their project "OneMoreFace" in Hangzhou Station. The competition is held by the well-known domestic technical community SegmentFault and several internet companies such as Ali and Softbank Saif. The competition is held in 5 cities of China (Beijing, Hangzhou, Shenzhen, Ji'nan, Wuhan) at the same time. More than 100 companies and schools participated with more than 1000 developers. The competition lasted more than 30 hours. All participants were asked to organize their team, choose their topic on the spot, and, after overnight development and debugging, come up with a product demo. This is a big challenge on the participants' creativity, technical skills, and their ability of cooperation. After an initial brain storming and combining the clmtrackr machine vision library with WebRTC, the GeekPie team submitted a real time anonymous social chat room named "OneMoreFace". Based on a public chat room, GeekPie applied face recognition technologies in order to replace the face by special images. By an adjustment of the 3D face model, the expressions and actions were still maintained. This realized a "you can see my facial expression and action, but don't know who I am" social chat environment for applications in the field of video communication and anonymous dating.



Arrivals of New Faculty Members

Five new assistant professors joined SIST recently. They are:



Xiong Wang
Ph.D. 2014, University of Arizona, USA.



Xiaopei Liu
Ph.D 2010, The Chinese University of Hong Kong, Hong Kong; Research Fellow at Nanyang Technological University, Singapore.



Jingyi Yu
Ph.D. 2005, Massachusetts Institute of Technology, USA; Professor at University of Delaware.



Liqun Fu
Ph.D. 2010, The Chinese University of Hong Kong, Hong Kong; Postdoc at KTH Royal Institute of Technology.



Yuanming Shi
Ph.D. 2015, Hong Kong University of Science and Technology, Hong Kong.

SIST Successfully Hosted the ShanghaiTech Symposium on Data Science

Hosted by the School of Information Science and Technology, the ShanghaiTech Symposium on Data Science (SSDS 2015) was successfully held in Shanghai from Tuesday, June 23 through Thursday, June 25, 2015. This international symposium attracted more than 1000 attendees from all over the world.

SSDS 2015 aims to promote the research in data sciences and computational technologies that are fundamental to modern massive data processing and analysis. Twenty five renowned professors and researchers from the world's top universities (such as Stanford, CalTech, Columbia University, UCLA, Georgia Tech, Tsinghua and PKU) and IT companies (such as Baidu and Huawei) presented their latest research work and the future research directions of Data Science at SSDS 2015.

SSDS 2015 proudly invited Prof. Stephen Boyd (Professor at Stanford University, a leading scientist in convex optimization, fellow of US National Academy of Engineering and IEEE Fellow), Prof. Inderjit S. Dhillon (Professor at UT Austin, a leading scientist in big data and machine learning, IEEE fellow, SIAM Fellow and ACM Fellow), Prof. Wen Gao (Professor at PKU, a leading scientist in multimedia and computer vision, vice president of NSFC, Fellow of Chinese Academy of Engineering, IEEE Fellow and ACM Fellow), Prof. Babak Hassibi (Professor at CalTech, a leading scientist in communication and image processing and IEEE Fellow) and Prof. Katsushi Ikeuchi (Professor at the University of Tokyo, a leading scientist in computer vision and robotics and IEEE fellow) to share their deep insights into data science and its future. Their talks caught widespread interests of the attendees of SSDS 2015.



SIST Seminars



Since September 2015, SIST has invited 11 international and domestic speakers from world-class universities, leading industry companies, and active research institutes. These distinguished speakers

presented their recent exciting research findings and discussed important technological progresses. Among them are: Prof. Xiaodong Li, an assistant professor in the statistics department at UC Davis, gave a talk named Phase Retrieval: From Convex to Nonconvex Methods;

Prof. Brian A. Barsky, a professor of Computer Science and Vision Science at the University of California, Berkeley, gave a talk named From Vision-Realistic Rendering to Vision Correcting Displays;

Prof. Tao Zhou, an associate professor at Academy of Mathematics and System Science of Chinese Academy of Sciences, gave a talk named Efficient Stochastic Collocation Methods for Uncertainty Quantification;

Prof. Nadia Magnenat Thalmann, a Professor and Director of the Institute for Media Innovation (IMI) at Nanyang Technological University, Singapore, gave a talk named Modelling the human body: from its external appearance to the hidden multiscale level.

SIST Faculty Meets Freshman



A meeting between professors and undergraduate students of the School of Information Science and Technology (SIST) was held at Zhangjiang campus on September 8, 2015. Professor Ding Zhi presented the development progress of

SIST and elaborated on the school's philosophies, student training, and international cooperation. More than 20 full-time teachers of SIST met with 120 students. SIST held a social event with tea and food after the meeting encouraging free interaction of all freshmen, parents, and professors.

SIST's Executive Chair Visited Four Joint Institutes of CAS Shanghai Branch

From Oct 28 to Nov 9 SIST's executive chair Prof. Yi Ma, together with the members of SIST's five committees (Faculty Search Committee, Academic Affairs Committee, Curriculum and Teaching Committee, Graduate

Recruitment and Admissions Committee and Research Developing and Planning Committee) visited four joint institutes of CAS Shanghai Branch: Shanghai Advanced Research Institute, Shanghai Institute of Microsystem and Information Technology, Shanghai Engineering Center for Microsatellites and Shanghai Institute of Technical Physics.

During this visit, SIST and the joint institutes reached consensus on initiating a platform for regular communication about their cooperation in teaching, research, recruitment and training of students. They also plan to give attention to the adjunct professors' initiatives, enthusiasm and experience in teaching and research in order to work together to improve the quality of recruiting prospective students, training current students, and helping finishing graduate students with their job search. The professors also plan to strengthen their cooperation in scientific research.



SIST Successfully Recruited 53 Exam-Free Graduate Students for 2016

During the past months SIST full professors have completed thousands of one-on-one interviews and accepted 53 exam-free graduate students from all over the country. SIST plans to recruit 80 graduate students in 2016. Every accepted student must receive strong recommendations from SIST professors.

NEW FACULTY PROFILE: Prof. Yuanming Shi

(In September 2015, SIST welcomed Dr. Yuanming Shi (Ph.D. 2015, Hong Kong University of Science and Technology) on its faculty. Let's listen to his sharing about himself and joining ShanghaiTech.)



I was born in the beautiful city Guilin of Guangxi Province. I have to say that I am always the lucky guy to have the best choices in my life. I was very lucky to get the last ticket to the experimental class of the best senior middle school in my home county, so I can receive the very high-quality middle school education. With a very top college entrance exam score, I have the enough freedom to choose universities and majors. Unfortunately, at that stage, I have no clear idea on my future career. The only thing that I keep in my mind is that I really love math. I was so excited when I heard about the mathematics and physics program in the school of science in Tsinghua. In this program, we will mainly study fundamental mathematics and physics courses in the first two years. After that, in principle, we have the freedom to choose our final major from any department. So I choose this program in Tsinghua, which is the first big decision that I have ever made in my life in 2007.

The education in the school of science enables me the mathematical and physical thinking capability, which turns out to be crucial for my future advanced study and research. After the first two years stressful and tentional study, I have to think if I still stay at the mathematics department to further explore the world of pure mathematics or try a new discipline to find the beauty of applied mathematics. After extensive survey, I decided to choose electronic engineering as my final major, as it highly relies on mathematical skills. It turns out to be an awesome decision again in my life in 2009, though the following two years became much more busy and stressful.

At the beginning of Spring Semester of 2010, I am very fortunate to join Prof. Wei Chen's research group in the "Undergraduate Student Research Training" program, which is also known as SRT in Tsinghua. During the SRT program, I mainly focused on the numerical algorithms design for the Meijer's G-function to assist the performance analysis in wireless networks. This

is the first time that I appreciated the power of mathematics when it meets engineering applications. Prof. Wei Chen is a very high-quality and productive researcher in wireless communications and information theory. His emphasis on striving for intuition, insights conveyed in his lectures, as well as his endless energy, have generated my very first impulse to enter the wireless communications realm. In 2011, I made another right and big decision on pursuing a PhD degree. Prof. Wei Chen thus recommended me to a world-renowned leader in wireless communications and networks Prof. Khaled B. Letaief at the Hong Kong University of Science and Technology (HKUST). I have to say that Prof. Wei Chen is one of the most important persons in my life. Without his kind help and guidelines, my life would not have been so colorful and meaningful.

I still remember how excited I am the first time I saw the beautiful HKUST campus. But the happiness disappeared very soon, as I have to struggle with finding the promising research topics and suitable methodologies. After almost two years extensive investigations and attempts, I finally choose cloud radio access networks (Cloud-RAN) as my PhD thesis topic. This is a very fantastic but challenging research topic with both great potentials and risks, as few papers existed on this topic at the beginning of 2013. But I am very excited about this inter-disciplinary research topic to explore novel scientific research problems. With the help and insights from my supervisors Prof. Khaled B. Letaief and Prof. Jun Zhang, I finally developed a unified framework to enable efficient optimizations of communication and computation resources across Cloud-RAN, thereby, fundamentally resolving the networking and computing issues for wireless densification and cooperation. In particular, I contributed important findings in exploiting the design problem structures (e.g., group-sparsity and low-rankness), revealing the network structures (e.g., partial connectivity), as well as developing

scalable algorithms via advanced optimization methods (e.g., the operator splitting method and Riemannian optimization). Based on these results, I completed my PhD thesis titled on "Scalable Sparse Optimization in Dense Cloud-RAN" in 2015.

As I was expected to obtain my PhD degree at the end of the fourth year PhD study, I have to make a decision on my future career at the beginning of 2015. A faculty position will definitely be the best gift for me to do scientific research constantly. As I want to go back to Mainland China, I am eager to find a friendly environment with enough freedom to do independent research. After intensive survey on the new ecosystem of ShanghaiTech, I believe that she must be the one I am seeking for. I was very excited to receive the on-site interview from ShanghaiTech on July 2015. During the on-site interviews, I realized that all the faculty members are so nice just like old friends. I was further convinced that this is the right place for me to start my academic career. I smoothly passed my thesis defense on August 2015 and then joined ShanghaiTech immediately on September 2015. You may feel how crazy I am to join ShanghaiTech family. I am deeply appreciated for the strong support from my supervisor Prof. Khaled B. Letaief and Prof. Zhi Ding, so I can aboard on ShanghaiTech in a timely way.

I am now extending my research to the mobile edge computing and networking to provide scalable connectivity and diversified services for massive devices, as well as focusing on the randomized sketching technique for large-scale distributed and parallel optimization. I am very happy to see that ShanghaiTech indeed provides a very good platform with enough freedom and resources for me to do high-quality research. I am also particularly excited to share my experience and knowledge with our students.

Information Security Demonstrations

Hijacking a drone. Using an app-controlled laundry machine for free. There are some of the demonstrations that a team of SIST undergraduate and graduate students gave during the Shanghai Information Security Carnivals in October, 2015. The carnivals were sponsored by the committee on economy and information of the Shanghai municipal government to educate the public about information security. On October 23, SIST graduate students Peng Chen and Yuanyi Wu demonstrated how to attack a highly popular consumer drone. By exploiting the vulnerabilities in the wireless communication channel between various components of the drone, they were able to eavesdrop, modify, and inject messages, which allowed them to hijack the drone, to eavesdrop on its video feeds, to inject bogus videos, and to control the drone's camera completely. On October 27, SIST sophomores Yifan Wang, Yifei Shen, and Qianhan Shao demonstrated how to exploit the vulnerabilities in the

app for a commercial laundry machine installed on many university campuses, including ShanghaiTech. An ordinary user needs to purchase laundry coupons before starting to machine. However, by analyzing the traffic between the app and its server and by reverse engineering the app itself, they discovered several weaknesses in the design and implementation of the app. By exploiting these vulnerabilities, they demonstrated how to eavesdrop on users' profile information (name, password, phone number, etc.) and how to run the machine for free. Both these demonstrations awed the audience and generated many interests in information security, SIST, and ShanghaiTech. The security team has reported their discoveries to the vendors and are helping the vendors fix the problems. Their research was advised by Professor Hao Chen.