

School of Electronic, Information and Electrical Engineering

<http://english.seiee.sjtu.edu.cn/>

I . Introduction to Disciplines and Main Research Fields

The School of Electronic Information and Electrical Engineering (SEIEE) has seven nationally primary disciplines consisting of Information and Communication Engineering, Control Science and Technology, Computer Science and Technology, Electronic Science and Technology, Software Engineering, Instrument Science and Technology, and Electrical Engineering. According to the 2012 Discipline Evaluation result from China Academic Degrees & Graduate Education Development Center, all the disciplines rank top Ten in China. In the 2015 QS World Ranking, the “Electronic and Electrical” ranks top 50 (which also ranks No. 2 in China), while the “Computer and Information” ranks top 100 (which also ranks No. 4 in China).

SEIEE has eight State Key Research Labs, 14 Provincial and Ministerial-level Key Research Labs, one State Engineering Elementary Course Electrics and Electronics Teaching Base, one State Electrics and Electronics Experimental Teaching Demonstration Center, and one State Integrated Circuits Professional Training Base. SEIEE targets at international frontier science and technology, meets the major national needs, strengthens innovative platform and team building, which leads to ten second National Prizes that include one in Nature Science and one in Technical Invention, as well as eight in Scientific and Technological Progress. SEIEE insists on internationalization and concentrates on cultivating talents with international perspectives and competitiveness. The number of overseas Chinese students and international students in our school ascends year by year.

Disciplines and Main Research Fields

Disciplines	Research Fields
Information and Communication Engineering	Communication and Information System, Signal and Information Process
Control Science and Engineering	Control Theory and Control Engineering, Detection Technology and Automatic Equipment, Systems Engineering, Pattern Recognition and Intelligent Systems, Navigation, Guidance and Control

(continued)

Disciplines	Research Fields
Computer Science and Technology	Computer System Structure, Computer Software and Theory, Computer Application Technology
Electronics Science and Technology	Physical Electronics, Circuits and Systems, Microelectronics and Solid State Electronics, Electromagnetism Field and Microwave Technology
Software Engineering	Smart City Application, Cultural Creation and Internet Software, System Software, Software Science Theory
Instrument Science and Technology	Precision Instrument and Machinery, Measuring and Testing Technologies and Instruments
Electrical Engineering	Electric Machines and Electric Apparatus, Electric Power System and Its Automation, High Voltage and Insulation Technology, Power Electronics and Power Drives, Theory and New Technology of Electrical Engineering

II. Faculty

1. Overview of Faculty

SEIEE has 733 faculty altogether. The 509 full-time faculty among whom 84% are PhDs and 26% have overseas Ph.D. degrees consist of 158 professors and 238 associate professors (in teaching system or research system). There are three academicians of Chinese Academy of Sciences, three academicians of the Chinese Academy of Engineering, 17 members of Thousand Talents Plan, seven members of the Thousand Talents Plan (youth) of China, 12 professors of Chang Jiang Scholars Program, 18 winners of the National Science Fund for Distinguished Young Scholars, eight chief scientists of the Major National Basic Research Program (973), and 14 scholars of IEEE Fellows.

2. Renowned Professors

No.	Name	Research Fields	No.	Name	Research Fields
1	ZHANG Xu	Communication and Information System	17	RAO Fangquan	Electrical Engineering
2	LIU Yongtan	Radar and Signal Processing Technology	18	MEI Hong	Computer Software and Theory
3	HE Zuyuan	Fiber-Optic Application Technology	19	LIU Hui	Wireless Communication
4	LIN Zongli	Control Theory	20	WU Xiaolin	Video Processing

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No.	Name	Research Fields	No.	Name	Research Fields
5	Anders Lindquist	System and Control	21	DENG Xiaotie	Algorithmic Game Theory
6	JIA Weijia	Computer Science and Technology	22	XU Lei	Pattern Recognition
7	ZHANG Yafei	Nano-materials and Apparatus	23	SU Yikai	Micro-nano Optical Apparatus
8	YU Wenxian	Radar Target Recognition	24	MAO Junfa	Electromagnetic Field and Microwave Technology
9	GUAN Xinping	Control Science and Engineering Technology	25	ZHANG Wenjun	State Digital Television Technology
10	WANG Xiaofan	Control Science and Control Engineering	26	CUI Daxiang	Nano-material
11	GU Dawu	Cryptology	27	MA Lizhuang	Computer Application Technology
12	FU Yuxi	Computer Application Technology	28	GUO Minyi	Computer Application Technology
13	LI Shaoyuan	Control Science and Control Engineering	29	HU Weisheng	Optical Communication
14	CHEN Guihai	Wireless Network	30	ZHANG Weidong	Control Science and Control Engineering
15	YANG Xiaokang	Communication and Information System	31	DONG Yi	Communication and Information System
16	WANG Xinbing	Wireless Network Coding	32	XIONG Hongkai	Communication and Information System

III. Achievements

1. Significant Achievements in The Last Five Years

National Scientific and Technological Awards

2014

(1) The 2nd prize of National Scientific and Technological Progress: *The Key Technology and Application of Runtime Support System of Virtual Machine*. Haibing Guan, Zongyou Shao, Zhenjiang Dong, Jiongjiong Gu, Haibo Chen, Zhengwei Qi, Guangya Li, Alei Liang.

(2) The 2nd prize of National Scientific and Technological Progress: *The Key Technology and Application of Multifunctional Molecule Imaging of Tumour Diagnosis and Treatment*. Baozhong Shen, Daxiang Cui, Dianwen Ju, Jian Ni, Xilin Sun, Wanhai Xu, Lina Wu, Tao Huang, Kai Wang, Kezheng Wang.

2012

(1) The 2nd prize of National Scientific and Technological Progress: *The Technology and Application of 3D High Density Packing of RF Electronic System*. Junfa Mao, Xiaowei Sun, Hongjiang Wu, Le Luo, Wenyan Yin, Linsheng Wu, Shaodong Wang, Liang Zhou, Wen Yu, Rong Qian.

2010

(1) The 2nd prize of National Scientific and Technological Progress: *The Key Technology and Application of Urban Power Grid and Electricity Disaster Prevention*. Haozhong Cheng, Qiantu Ruan, Wei Wang, Xiuchen Jiang, Wei Xie, Dong Liu, Weizhong Qian, Xi Jin, Jixin Zhu, Minqiang Song.

(2) The 2nd prize of National Scientific and Technological Progress: *The Key Technology and Application of Optimizing Operation of Complex Hydroelectric Energy*. Jianzhong Zhou, Guangwen Ma, Chuanwen Jiang, Yongchuan Zhang, Jinwen Wang, Zhihua Deng, Shiyong Wu, Li Chang, Xiaohui Yuan, Xinde Sun.

Provincial and Ministerial Scientific and Technological Awards:

2014

(1) The 1st Prize of Chinese Institute of Electronics S&T: *Multi-parameter Noninvasive Detection Technology and Disease Diagnostic System of Gastrointestinal Tract*. Guozheng Yan

2013

(1) The 1st Prize of Scientific and Technological Progress of Ministry of Education: *Heaven-and-Earth Collaborative Multimedia Communication System*. Lin Gui, Wenjun Zhang, Wenfeng Ma, Bingshan Zhang, Bo Liu, Zhongming Zhang, Jingkan Lu, Jian Xiong, Ning Liu, Zongguang Yu, Yang Dai, Peng Cheng, Youyun Xu, Yanfeng Wang, Yan Shi.

(2) The 1st Prize of Scientific and Technological Progress of Shanghai: *The Key Technology and Application of Cyber Information Analysis and Forensics*. Jianhua Li, Shenghong Li, Weidong Qiu, Daohong Lu, Aixin Zhang, Yong Fang, Zhi Xue, Xiang Li, Xiang Lin, Yueguo Zhang, Shilin Wang, Yijin Wang, Lei Fan, Jin Ma, Ping Yi.

2012

(1) The 1st Prize of Scientific and Technological Progress of Ministry of Education: *The Key Technology and Application of Virtual Machine Operation in the Network Computing Environment*. Haibing Guan, Zongyou Shao, Dong Zhang, Zhenjiang Dong, Haibo Lu, Zhengwei Qi, Binyu Zang, Guangya Li, Xiaoying Lai.

(2) The 1st Prize of Scientific and Technological Progress of Ministry of Education:

Research on the Transmission Control Theory and Key Technology of Large-scale Mine Hoisting System. Jianguo Jiang, Chongjian Li, Peng Dai, Xiaojie Wu, Xiangxin Li, Dongsheng Zuo, Guilin Xie, Wei Wu, Guifeng Wang, Shutong Qiao, Jianfei Zhao, Yaning Zhou, Jingxin Wang, Yajun Xu, ? Luo, Bin Wan, Wei Duan, Shan He, Weihong Xing, Li Tang, Fan Li.

2011

(1) The 1st Prize of Scientific and Technological Progress of Shanghai: *The Intelligent Processing Technology and Application of Video Surveillance.* Xiaokang Yang, Guang Tian, Li Son, Zhenghua Yu, Wenjun Zhang, Longfei Liang, Yi Xu, Yuncai Liu, Tao Zhang, Pu Li, Jiaolin Wang, Rugao Zhang, Rui Zhang, Rong Xie, Qingjie Kong.

(2) The 1st Prize of Scientific and Technological Progress of Shanghai: *The Technology and Application of Packing of RF System-level.* Junfa Mao, Xiaowei Sun, Hongjiang Wu, Wenyan Yin, Linsheng Wu, Le Luo, Shaodong Wang, Gaobiao Xiao, Liang Zhou, Min Tang, Liang Wu, Yongzhi Zhao, Hongli Peng, Xiaochun Li.

(3) The 1st prize of Shanghai Technology Innovation: *The Key Technology and Core System of networked Video Media Processing and Adaptive Distribution.* Hongkai Xiong, Xingdong Wan, Zhi Liu, Junni Zou, Li Song, Zhijing Zhang, Junfeng Du, Sihui Sun, Xujie Zou, Shuhong Wang, Chuanfei Luo, Wei'e Lin.

2010

(1) The 1st prize of Excellent Achievement & Technology Innovation of Scientific Research in Colleges and Universities: *The Detection and Application of Robots' Equipment in Special Enviroment.* Guozheng Yan, Tiansheng Lv, Zhiwu Wang, Hua Liu, Guo qing Ding, Zhi Yan.

2. Significant Science and Research Projects in The Last Five Years

National Natural Science Foundation of China Innovation Research Group	2012	Digital Media Communication Theory and Key Technology	ZHANG Wenjun	
	2012	Control Theory and Methods—Designing, Controlling and Optimizing of Network System	GUAN Xinping	
National Significant Science Research Instrument Manufacture Project	2013	The Development and Application of Multi-dimensional and High-resolution Biological Tissue Representation and Analytical Instrument	GUAN Xinping	

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National Natural Science Foundation of China Significant Science and Research Instrument Manufacture Project	2013	Optical Fiber Strain Field Detector with Ultrahigh Precision Aiming at sensing the Crustal Deformation	HE Zuyuan	
	2013	The Development of Solid State MHz Continuous High Repetition Frequency High-voltage Pulsed Source	MAO Junfa	
The National Science Fund for Distinguished Young Scholars	2010	Analysis and Content Extraction of Large-scale Mass Videos	YANG Xiaokang	
	2010	System Modeling and Controlling	ZHANG Weidong	
	2011	Transmission and Exchange of Photonics	SU Yikai	
	2012	Transmission and Control of Optical Information	DONG Yi	
	2013	Resource Allocation and Performance Evaluation of Wireless Network	WANG Xinbing	
	2014	Multimedia Coding and Communication	XIONG Hongkai	
Major National Basic Research Program (973)	2010	Research on the Photon Information Processing Integrated Chip and Technological Base with Superspeed and Low-power Dissipation	CHEN Jianping	Chief
	2014	Urban Big Data Ternary Space Cooperative Computing Theory and Methods	GUO Minyi	Chief
National High Technology of Research and Development Program (863)		Memory Computing System Software and Development	HUANG Linpeng	Project Manager
		Technical Research and Application of Media Dynamic Self-organization	ZHANG Ya	Project Manager
		Research on the Mass Data Processing, Storage and Application of Power Grid	YAN Zheng	Project President

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National High Technology of Research and Development Program (863)		Research on the Wavelength Option Switch and Broadband Tunable Filter Array Kernel Chip	LU Jiangang	Project President
		Research on the Key Technology and Verification of Digital TV—Study on the High-end Video Coding and Network Adaptation	SONG Li	Project President
National Significant Project	2013	Demonstration Project Technology of Big Dipper of Yangtze River Delta	YU Wenxian	President

IV. International Collaboration

International Cooperation is a part of SEIEE's driving force for strategic development. SEIEE enhances interaction through programs like double degree programs, exchange programs, and overseas internship. At the same time, we create friendly international environment through inviting overseas teachers, and recruiting staff for international affairs operation. In recent years, SEIEE digs hard in establishing cooperation mode with overseas universities in depth and width, and has already built profound friendship with several institutions through a number of parallel cooperation programs.

Double PhD Programs: Institut National des Sciences Appliquées Lyon (INSA Lyon), Chalmers, University of Saragoza, KU Leuven, National Chiao Tung University

Double Master Programs: INSA Lyon, Wasada University, Technical University of Berlin (TUB) University

Specific Project Programs: INSA Lyon, Georgia Tech Institution

Exchange programs: INSA Lyon, Georgia Tech Institute, TUB University, Ohio State University, Padova University, Oulu University, Chalmers University

V. Platforms for Scientific Innovation

1. Research Centers

State Key Research Labs

1. State Key Laboratory on Local Optical-Fiber- Communication Networks and Advanced Optical Communication Systems.
2. State Key Laboratory on Micro/Nano Process Technology
3. Shanghai Key Laboratory of Scalable Computing and Systems.

4. National Engineering Center of Digital TV
5. National Engineering Lab for TFT-LCD Materials and Technologies.
6. National Engineering Lab for Information Content Security
7. State Energy Smart Grid R&D Center (Shanghai)
8. Future Media Network Collaborative Innovation Center

Provincial Research Bases

1. Ministry of Education Key Lab of System Control and Information Processing
2. Ministry of Education Key Lab of Power Transmission and Power Conversion and Control
3. Ministry of Education Key Laboratory for Thin Film and Micro fabrication
4. Ministry of Education Engineering Research Center for Network Information Security Management and Service
5. Shanghai Key Laboratory of Digital Media Processing and Communication
6. Shanghai Key Laboratory of Information Security Management.
7. Shanghai Key Laboratory of Scalable Computing and Systems.
8. Shanghai Key Laboratory of Navigation and Location Based Service
9. Shanghai Engineering Technology Center for Superconducting Material and System

2. Practice Bases Built with Enterprises

- (1) Shanghai Jiao Tong University Control Engineering Master Program China General Nuclear Power Group Practice Base (Shanghai Municipal Demonstration Base)
- (2) Shanghai Jiao Tong University Electronic Engineering Master Program TI Shanghai Corporation (Shanghai Municipal Demonstration Base)
- (3) Shanghai Jiao Tong University Software Engineering Master Program Internal Practice Base
- (4) Shanghai Jiao Tong University Electronic and Communication Engineering Information Security Practice Base
- (5) Shanghai Jiao Tong University Electronic and Communication Engineering BesTV Practice Base (Shanghai Municipal Demonstration Base)

VI. Distinguished Alumni

- (1) MAO Daolin, Sina former CEO, 1985 graduate of Computer Science Department
- (2) YANG Yuanqing, Lenovo Board Director and CEO, 1986 graduate of Computer Science Department
- (3) LU Yimin, China Unicom board member and CEO, 1985 graduate of Computer Science Department
- (4) TENG Shanghua, Computer Science Department Director, Viterbi School of Engineering, University of Southern California, 2008 G? del Prize receiver, 1985 graduate of

Computer Science Department

(5) ZHU Linan, Legend Holdings Executive Vice President, Legend Capital President, Managing Director, Lenovo Non-executive Board Member, 1984 graduate of Electronic Engineering Department