School of Mechatronic Engineering and Automation
Baoshan Campus
(One training center)

Jiading Campus

Yanchang Campus
(Three departments)
Departments & Training Center

Multi-disciplinary program covering mechanics, electronics, measurement, and control

- Department of Mechanical Automation Engineering
- Department of Precision Mechanical Engineering
- Department of Automation Engineering Technology Training Center
Disciplines

Four first-level disciplines

- Mechanical Engineering
- Control Science & Engineering
- Instrument Science & Technology
- Electrical Engineering

- 7 Undergraduate Programs
- 4 First-level Master Programs
- 2 First-level Doctoral Programs
- 3 Postdoctoral Research Centers
- 15 Second-level Graduate Programs
- 11 Second-level Doctoral Programs

Total number of faculty and staff: 422
- Full-time faculty: 267
- Professors(Researchers): 61
- Faculty with Ph.D. degrees: 210

Total number of students:
- Master & doctoral students: ~1500
- Undergraduate students: ~2350
| 2 First-level Doctoral Programs | Mechanical Engineering  
Control Science and Engineering |
|-------------------------------|-------------------------------|
| **11 Second-level Doctoral Programs** | Mechanical Manufacturing and Automation  
Mechanical Electronic Engineering  
Mechanical Design and Theory  
Vehicle Engineering  
Electric Power, Electron and Transmission of Electric Power  
Control Theory and Control Engineering  
Detection Technology and Automation Equipment  
Systems Engineering  
Pattern Recognition and Intelligent System  
Navigation, Guidance and Control  
Additive Manufacturing and Tissue Repair (interdiscipline) |
| **3 Postdoctoral research stations** | Mechanical Engineering  
Control Science and Technology  
Electrical Engineering |
Development of Key Disciplines

Since 1980s, a number of disciplines have been supported by national and Shanghai government.

- During the “10th Five-Year Plan" period, Mechanical and Electronic Engineering was listed as one of the first Shanghai municipal key disciplines. Advanced Robot Technology and Modern Manufacturing System, Electronic Instrument Automation were listed in the second batch of Shanghai key advantaged disciplines and special disciplines, respectively;
- Advanced Manufacturing and Automation was listed in the national "211 Project" key disciplines for three consecutive times since 1998;
- During the period of "11th Five-Year Plan", the Optimization and Control Technology of Energy Engineering was listed as one of the three major development directions in the national "211 Project" key discipline “Energy Engineering and New Technology”;
- We hold the sub-project “Urban public security and advanced technology and equipment“ of the project “Urban society and smart city“ in the program of "12th Five-Year" connotation construction of Shanghai local colleges and universities.
- Mechanical and Electronic Engineering was listed in the national key disciplines in 2001;
- Mechanical Engineering was listed in the first class disciplines of Shanghai in 2002;
- Mechanical Engineering, Control Science and Engineering were listed the Shanghai Plateau Disciplines in 2015.
- 2016, Began to assume the construction task of combination of medicine and engineering international first-class disciplines direction of Shanghai University
## Outstanding Talents

<table>
<thead>
<tr>
<th>Title</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign academician</td>
<td>3</td>
</tr>
<tr>
<td>National 1000 Talents Plan</td>
<td>5</td>
</tr>
<tr>
<td>Chang Jiang Scholars</td>
<td>2</td>
</tr>
<tr>
<td>National Outstanding Youth Scientist</td>
<td>3</td>
</tr>
<tr>
<td>National EXcellent Youth Scientist</td>
<td></td>
</tr>
<tr>
<td>The New Century Hundred, Thousand and Ten Thousand Talent Project (Ministry of Personnel)</td>
<td>1</td>
</tr>
<tr>
<td>Science and Technology Innovation Youth Leader of Science and Technology Ministry</td>
<td>1</td>
</tr>
<tr>
<td>New Century Excellent Talents (Ministry of Education)</td>
<td>3</td>
</tr>
<tr>
<td>Shanghai Leader Talents (Shanghai City)</td>
<td>2</td>
</tr>
<tr>
<td>Shanghai Excellent Academic / Subject Leader</td>
<td>5</td>
</tr>
<tr>
<td>Shanghai 1000 Talents Plan</td>
<td>8</td>
</tr>
<tr>
<td>Shanghai Oriental Scholars (Shanghai City)</td>
<td>9</td>
</tr>
<tr>
<td>Shanghai Youth Oriental Scholars (Shanghai City)</td>
<td>6</td>
</tr>
</tbody>
</table>
Shanghai Key Laboratory of Power Station Automation Technology

**Major Research Areas:**

1. Power Station Information Detection and Intelligent Processing Technology
2. Power Automation Process System
3. New Energy Generation and Driving Control Technology
Shanghai Key Laboratory of Intelligent Manufacturing and Robotics

**Major Research Areas:**

1. Intelligent Design and System Integration
2. Intelligent Basic Element and Unit Technology
3. Robotics and Intelligent Equipment
Key Labs

Key Laboratory of Advanced Display and System Application, Ministry of Education

**Major Research Areas:**

1. Advanced Display Materials & Instruments
2. Advanced Packaging & Micro-system Integration, etc.
China Shipbuilding Industry Systems Engineering Research Institute*Shanghai University
Marine Intelligent Unmanned System Equipment Laboratory

**Key areas:**

1. National major science and technology special projects of unmanned equipment
2. Civilian, military and law enforcement equipment development
Joint Labs

China - UK Science Bridge Partners
Joint Laboratory of Energy and Automation

Key areas:

Sino-British Science Bridge Project
"Sustainable Energy and Architecture"
Joint Labs

Shanghai University-NARI Group
New Technology of Smart Grid Joint R & D Center

Key areas:

• Application of New Material for Smart Grid
• New technologies of smart grid, including robots, smart city
Shanghai University, Rockwell Automation China, Cisco China, Shanghai Fanuc robot, Shanghai ABB Engineering, and SIASUN together build intelligent manufacturing and robot innovation laboratory

Key areas:

1. Intelligent robot technology and Application
2. Intelligent Manufacturing Technology and Integration System
National Comprehensive Experimental Teaching Demonstration Center

Major Teaching & Research Areas:

1. Comprehensive Engineering Practice and Innovation and Entrepreneurship Education for undergraduate students
2. Engineering Practice and Creative Education for Youths
3. Additive Bio-manufacturing Technology and Equipment
Income Research Funding

Research Fundings 2013-2016
(Unit: Ten thousand yuan)

Income Research Funding
(Ten thousand yuan)

- 2013: 6103
- 2014: 7507
- 2015: 8633
- 2016: 11259.66

Ratio of Serving for Shanghai in 2016
- Shanghai: 21%
- Non Shanghai: 79%

Funding sources in 2016
- State-level: 22%
- Provincial-level: 19%
- Industry: 60%

(Unit: Ten thousand yuan)
## Awards

### 2009-2016 Major awards of National, Shanghai science and technology (SHU as First participant)

<table>
<thead>
<tr>
<th>Name</th>
<th>Project</th>
<th>Award</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaorong XIE</td>
<td>Key technology and equipment for unmanned autonomous measurement of complex island reef waters</td>
<td>2016 National Technology Invention Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Jianhua ZHANG</td>
<td>Development and Application of equipment Key Technologies of Flat Panel Display High-precision Pattern of Technology</td>
<td>2016 Shanghai Science and Technology Progress Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Shaorong XIE</td>
<td>Key technology innovation and application of intelligent control system for unmanned craft</td>
<td>2015 Shanghai Science and Technology Progress Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Jianhua ZHANG</td>
<td>Key technology of light emitting device (OLED/LED) and applications for novel display and lighting</td>
<td>2014 Shanghai Technological Invention Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Feng RAN</td>
<td>Development and application of the core technology of flat panel display based on ultra high gray imaging method</td>
<td>2013 Shanghai Science and Technology Progress Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Shaorong XIE</td>
<td>Monitoring and controlling system for water safety based on the technology of detecting robot</td>
<td>2011 Shanghai Technological Invention Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Zhijie TANG</td>
<td>Multiple composite new type integrated security system</td>
<td>2015 Shanghai Technological Invention Award</td>
<td>Second prize</td>
</tr>
</tbody>
</table>
## Awards

### 2009-2016 Major awards of National, Shanghai science and technology (SHU as First participant)

<table>
<thead>
<tr>
<th>Name</th>
<th>Project</th>
<th>Award</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yueli HU</td>
<td>Research and development of controller chip, system module and its application in automobile body</td>
<td>2014 Shanghai Science and Technology Progress Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Chen PENG</td>
<td>Modeling, analysis and control of networked control systems</td>
<td>2013 Shanghai Natural Science Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Jun LUO</td>
<td>Bionic robot mechanical PTZ technology and its application</td>
<td>2013 Shanghai Technological Invention Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Minrui FEI</td>
<td>Key technologies of network measurement and control system and power station automation</td>
<td>2009 Shanghai Science and Technology Progress Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Jun LUO</td>
<td>A non symmetric variable distance device for micro rotor aircraft</td>
<td>2009 Shanghai Technological Invention Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Feng RAN</td>
<td>The research and application of the chip, system module of the automobile electronic core controller</td>
<td>2009 Shanghai Science and Technology Progress Award</td>
<td>Second prize</td>
</tr>
</tbody>
</table>
## Awards

### 2009-2016 Other awards and awards as Co-PI

<table>
<thead>
<tr>
<th>Name (Order)</th>
<th>Project</th>
<th>Award</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minrui FEI (8)</td>
<td>High security complete sets of special control devices and systems</td>
<td>National Science and Technology Progress Award</td>
<td>Second prize</td>
</tr>
<tr>
<td>Jun LUO (1)</td>
<td>“Jinghai” series unmanned craft (first participant)</td>
<td>2015 China International Industry Exhibition</td>
<td>Gold innovation prize</td>
</tr>
<tr>
<td>Surong HUANG (1)</td>
<td>High density permanent magnet motor system for new energy vehicle (First participant)</td>
<td>2011 China International Industry Exhibition</td>
<td>Silver prize</td>
</tr>
<tr>
<td>Zhenbang GONG (2)</td>
<td>Research on high precision micro machining technology and its application in mass production (Second participant)</td>
<td>2009 Zhejiang Science and Technology Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Minrui FEI (5)</td>
<td>Key technology research and application of integrated automation system in large power station (Third participant)</td>
<td>2009 China Machinery Industry Science and Technology</td>
<td>First prize</td>
</tr>
<tr>
<td>Surong HUANG (3)</td>
<td>Development of high density permanent magnet motor and its control system for electric vehicle (Second participant)</td>
<td>2010 Shanghai Science and Technology Progress Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Name (Order)</td>
<td>Project</td>
<td>Award</td>
<td>Order</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Minrui FEI (4)</td>
<td>Automatic control system and application of major power generation projects (Second participant)</td>
<td>2011 Shanghai Science and Technology Progress Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Jun LUO (6)</td>
<td>Development of unmanned intelligent measuring platform (boat) (Second participant)</td>
<td>2013 China Marine Science and Technology Award</td>
<td>First prize</td>
</tr>
<tr>
<td>Zhiming WANG (2)</td>
<td>Research on the key technologies of detection and control system for children (Second participant)</td>
<td>2013 Science and Technology Award of National Quality Supervision and Inspection Bureau</td>
<td>Second prize</td>
</tr>
<tr>
<td>Guiqin LI (2)</td>
<td>Development of high speed dynamic tensile machine for electromagnetic plastic material (Second participant)</td>
<td>2014 SAIC Technology</td>
<td>Innovation prize</td>
</tr>
<tr>
<td>Huayan PU (1)</td>
<td>The key technology and application of intelligent unmanned operation system in multi medium complex environment (First participant)</td>
<td>2015 Science and technology award of China Instrument and meter Association</td>
<td>Second prize</td>
</tr>
<tr>
<td>Jing LI (3)</td>
<td>Research and Development on Orbital Grinding Technology and Machines for Asymmetric Shafts</td>
<td>2016 Shanghai Technology Invention Award</td>
<td>First prize</td>
</tr>
</tbody>
</table>
International Influence

✔ Selected as national “1000 Talents Plan”
✔ Chang Jiang Scholar
✔ IEEE Fellow
✔ Made a great breakthrough in the study of the heat transfer of graphene based films, and the heat dissipation effect almost doubles compared with the current international level. The results have been published online in the top international journal “Nature Communications”.

Member of the Swedish Royal Academy of Engineering Science
Professor Liu Jianying
Committed to the electronic packaging technology research, the main areas:

- High thermal conductivity film
- Interface cooling material, CNT based frontier packaging technology
- Conductive adhesive, lead-free solder and multiple interconnect and packaging materials with green substrates;
- Packaging technology and reliability research of new type high-density device and its application in electronic packaging.
International Influence

☑ Selected as national “1000 Talents Plan” in 2016
☑ International leader of Micro - nano robots
☑ IEEE Fellow ; ASME Fellow
☑ Lifelong professor of Department of Mechanical and Industrial Engineering, Department of Electrical and Computer Engineering, Department of Bioengineering in University of Toronto, Chairman of the Canadian Micro - Nano Engineering Systems
☑ International Robotics & Automation Outstanding Achievement Award
☑ First Prize of American Reproductive Medicine Annual Innovation Award
☑ Canadian Natural Science Foundation outstanding achievement award presented by Canadian Prime Minister and Governor personally

Micro - nano robots: pioneering results

☑ Developed the world’s first robot cell surgery system and applied to clinical artificial reproductive medicine
☑ Developed the world’s first robot cancer cell mechanical and electrical measurement system and used in noninvasive bladder cancer detection
☑ Developed the world’s first robot myocardial cell efficacy measurement system and used in heart disease patients personalized medication
☑ Developed the world’s first closed-loop control nano-operating robot system with highest motion control indicators and used in semiconductor chip automatic quality testing

Academician of Canadian National Academy of Engineering
Professor Sun Yu

Devised the world's first robot cell surgery system and applied to clinical artificial reproductive medicine
Devised the world's first robot cancer cell mechanical and electrical measurement system and used in noninvasive bladder cancer detection
Devised the world's first robot myocardial cell efficacy measurement system and used in heart disease patients personalized medication
Devised the world's first closed-loop control nano-operating robot system with highest motion control indicators and used in semiconductor chip automatic quality testing
International Influence

- Selected as national “1000 Talents Plan” in 2015
- ASME Fellow; CSME Fellow
- Lifelong professor of Department of Mechanical and Industrial Engineering, University of Toronto, Canada
- The first Asian president of the Canadian Institute of Engineering Research
- Canada permanent representative of IUTAM
- Deputy editor of Journal of Vibrations and Acoustics in ASME
- Won the "outstanding foreign scholars academic research award"

Academician of Canadian National Academy of Engineering
Professor Zuwu Zheng

Main research direction:

- Top experts in the field of mechanical vibration and mechanical fault diagnosis
- Kinetics analysis
- MEMS, Mechatronics
- Has developed two sets of commercial dynamics software for Litens Automotive Group, a large multinational automotive company
- Research and development of synchronous variable transmission technology

- Professor of Changjiang Scholar, Ministry of Education
- Vice President of Swinburne University of Technology, Australia
- Former Vice Minister of Higher Education (Research and Innovation), Central Queensland University, Australia, Director of Intelligent and Network System Science Research Center
- Chairman of IEEE Institute of Industrial Electronics Network Control System and Application Committee
- Deputy editor of IEEE Transactions on Industrial Electronics (Chinese Academy of Sciences I Journal), etc.
Main achievements: Won first prize of Shanghai Technology Invention, and first prize of Shanghai Science and Technology Progress. In charge of four national 863 projects, four projects of National Natural Science Foundation of China(Key, theme, outstanding projects). More than 180 papers published on international journals like Scientic Reports, IEEE Trans. Robotics & Automation Magazine, and IEEE Robotics, IEEE. Control systems Technology. Awarded the IEEE best paper in Biomimetics, IEEE ICRA Best Student Paper, and Best Manipulation Paper Award-Finalist. Selected as Shanghai Dawn Scholar, Shanghai Leading Talent, Outstanding Academic Leader, Science and Technology Ministry of Youth Innovation Leader, and selected in "Kai star" program and "Kai star" tracking program of Shanghai.
Large aircraft is a modern cutting-edge technical area, which requires technology integration in new materials, automatic control, intelligent assembly, modern manufacturing, advanced power, position sensing, communication & testing & simulation etc. The current relevant research areas include:

1. Ground testing equipment for aeronautic applications
   Development of ground test simulator and test software using the method of modularization, flexibilization and network design.

2. Intelligent automated assembly equipment for aviation industry
   R&D in robots and machine vision systems.

3. Design of space positioning sensor
   Surface normal sensors, two-dimensional vision sensors and three-dimensional photoelectric sensors.

4. Flight simulation
   Flight simulators for general aviation and civil aircraft.
Domestic Influence

Promote the electric drive core technology and application research on the new energy automotive and advanced manufacturing key technology, based on energy-efficient permanent magnet motor drive system innovation.

- High energy efficiency permanent magnet motor based on collaborative innovation of material structure manufacturing
- Research on the basic technology of electric drive
- Design and simulation of electric drive measurement and of control theory
- Universal servo system for electric drive platform with intelligent motion control and energy management

National 1000 Talents Plan
Professor Luo Jian

- Selected as national "1000 Talents Plan" and “100 Talents Plan” of the Chinese Academy of Sciences in 2010
- Major project of Chinese Academy of Sciences “Electric vehicle and key technology development”
- Major project of Shanghai Science and Technology Commission “Research and development of the key technology of pure electric vehicle power system”
- Major projects of Chinese Academy of Sciences “A new generation of advanced electric vehicle research and development of EVT motor system”
- 863 project of Ministry of Science and Technology “Distributed driving system of wheel hub motor and pure electric integrated chassis mini vehicle”
- Project of Shanghai Science and Technology Commission “Development of permanent magnet motor for low cost vehicle”

New energy vehicle development

Motor drive system
- Improve system efficiency
- Reduce weight volume
- Improve reliability
- Lower production cost
- Intelligent control
Promote the application and development of intelligent water jet technology and top-line research intelligent equipment, focus on the technology of "soft" precision control and ultra high pressure cutting according to the "made in China 2025 plan".

- Soft precision control technology
- Key technologies of super high pressure
- Expert system based on water jet
- Fundamental research on precision motion system

Selected as national “1000 Talents Plan” in 2013
Selected as Shanghai “1000 Talents Plan” in 2013
Inventor of “Five axis intelligent water jet”
Reported by CCTV science and education channel three times
Demonstration and Application Development Fund Project of Shanghai Zhangjiang National Innovation Demonstration Zone “Five Axis Intelligent Waterjet System”
Domestic Influence

Professor Quanke Pan
New century talents of the Ministry of Education
Most Cited Chinese Researchers in 2014, 2015, 2016 by Elsevier

Professor Chen Peng
Shanghai Oriental scholar, Oriental tracking scholar
Most Cited Chinese Researchers in 2014, 2015, 2016 by Elsevier

Professor Li Tao
Shanghai Oriental Scholars
National EXcellent Youth Scientist
Shanghai Youth Science and Technology Star

Professor Suzhou
Shanghai 1000 Talents
Shanghai Oriental Scholars

Professor Li Yuwen
Shanghai Oriental Scholars

Professor Yang Xuyong
Shanghai Oriental Scholars
Shanghai Youth Science and Technology Star
Professor Zhang Jianhua won the 2015 "Shanghai March 8 red flagposters", 2016 "Shanghai Women's Innovation Award", 2016 "Youth Science and Technology Outstanding Contribution Award"

Professor Xie Shaorong won the 2014 "national" meritorious service "model 2016 Shanghai May Day Labor Medal"

Unmanned craft team won the 2017 "Shanghai workers pioneer"

Unmanned craft overall lab won the 2016 annual Shanghai March 8 red flag collective
Industry-Academia-Research

Establish cooperative relationships with more than 30 leading enterprises; create a joint network of practice bases including 3 Shanghai municipal undergraduate and graduate joint training bases; establish 14 corporate scholarships of 800 thousand Yuan;

三一重工  SANY
西门子  SIEMENS
上海 ABB  ABB
自仪股份  SS
台达  DELTA
发那科机器人  FANUC
东洋电装  TEC
亚德客  AIRTAC
上海市计量院  SIMT
上海仪器仪表研究所

上海电气集团
延锋伟世通
德国卡尔蔡司
克来机电
高迈特刀具
怡达机电
强生包装
济丰包装
上海市质检院
上海电力建设启动调整试验所，等
Luyue Ju: "Innovation and practice on strengthening technical capabilities and training high-level personnel for numerical control technology, by comparing with international standards" won the 2014 second award of national teaching achievements, "Cultivation and exploration of high skilled personnel for numerical control" won the 2014 first prize for Shanghai teaching achievements.

- "Microcomputer principle and ApplicationA"—Municipal Quality Courses
- "Microcomputer principle and interface technology practical tutorial" won Shanghai excellent teaching materials Award
- "Simulated electronic technology"、"Principle of mechanical and electrical integration"、"Technology innovation and independent intellectual property rights" are listed as 3 key construction courses in Shanghai
- "In order to cultivate the results oriented, carry out the construction of mechanical engineering personnel training system" is supported by University key teaching reform program in Shanghai
Our students won the second prize in the fourteenth National College Students' extracurricular academic science and technology work competition "Challenge Cup" in 2015, which is considered as "Olympic" event of the contemporary college students' science and technology innovation.

Shanghai University team won 12 champions in 2016 RoboCup China robot competition on categories of family services and international RoboCup.

Our students won 46 national, 92 provincial and ministerial level contests on science, technology and art, with total number of 138 awards.
Awarded the Outstanding Ph.D. Dissertation in “Shangyin” Mechanic in 2013 and 2014, which is the highest award of Ph.D. Dissertation of Mechanical Engineering discipline " in “Mainland, Taiwan, Hongkong, and Macao”

2016 won only one Zhang Si-Ying (CCDC) Outstanding Youth Paper Award in the 28th Chinese Control and Decision Conference.

2015 Shanghai University President Scholarship

2016 Electronic Society Excellent Master thesis award

National Institute of Chinese system simulation

2015 Excellent Doctoral Dissertation

Three students won Shanghai Excellent Master Thesis Award in 2015, 2016
In September 2016, funded by the National Natural Science Foundation of Sino-German Science Center, Shanghai University and the German Max Planck Institute hosted the "2016 Sino-German Symposium-Modeling, Model Reduction, and Optimization of Flows".

2016.8, United Kingdom Automatic Control Council (UKACC) held jointly by Shanghai University and Queen's University Belfast UK etc. was held, and at the opening ceremony held a "Sino-British electric vehicle and smart grid joint laboratory" opening ceremony.

August 2016, "Development Strategy of Mechanical and Vehicle Engineering 2035" international top-level forum was held.

Signed a cooperation agreement with Georgia Institute of Technology of United States which is ranked 84 on 2015 QS World University.
Signed a cooperation agreement with Korea National University of Busan at the end of 2014 to continue years of international exchange program. 4 graduate students visited Mechanical Engineering school of Busan University for a month, and 2 undergraduate students exchanged for one semester in 2015. At the same time, seven students from Busan university studied in our college.

In 2015, a number of selected undergraduate students from our college of mechanical engineering and industrial engineering specialty have studied their fourth years of undergraduate courses in University of Toronto with “3+1+1” Project.
“Jinghai” series—China’s first unmanned surface vehicle that has gone to the poles to carry out autonomous mapping

✓ Independent research and development
✓ Worked at the South China Sea Islands in 2013, 2015
✓ Worked at the Antarctic Rose Waters with “Snow Dragon” in 2014
✓ The first prize of Shanghai Science and Technology Progress
✓ Won the China International Industry Fair Innovation Gold Award in 2015
✓ Won the Special Prize of China Maritime Institute Science and Technology Progress Award in 2016
✓ Won the second prize of National Technology Invention in 2016
✓ During the second session of the military and civilian integration exhibition, Xi Jinping as the core of the seven members of CPC Central Committee Political Bureau listened to the report on the key technologies, products and applications of unmanned boats.
✓ Subjects with National Defense Specialty supported by the unmanned craft passed the national preliminary assessment, Ministry of Education Key Laboratory of National Defense formally incorporated into the reporting procedures

Minister of Education Chen Baosheng and his entourage came to our school for research

Industry Expo Innovation Gold Award
Automation and Electrical Engineering

Networked control, detection and sensing, modeling and optimization, smart grid, and motor drive

- **Talent team**: seven faculty members are listed in The Yangtze river, The new century, The east, Shanghai one thousand talents, one in Thomson Reuters Global high reference researcher and two Elsevier China’s high cited scholar

- **High level academic papers**: 15 ESI highly cited papers

- **Prizes**: 5 provincial first prizes, 4 provincial second prizes, 4 second prizes of Shanghai Natural Science Award

- **Projects**: More than 30 items of National Natural Science Foundation, 863 plan, science and technology support plan, major scientific instruments special, major science and technology special, and other national issues

- **Key Technologies**: Electric drive technology of new energy vehicle, intelligent technology of flow meter, automotive electronic control module technology, field bus and embedded technology, frequency control technology

- **Industry influence**: Cooperation in the completion of Shanghai Power Station Automation Technology Key Laboratory, Shanghai Automotive Electric Drive Engineering Technology Research Center
Robot Technology and Application

Industrial Robot  Service Robot

Rehabilitation Robot  Bionic robot

Dual-arm Robot  Beijing Opera Robot  Shanghai No. 2  Service Robot  Dexterous Hand  SCARA Robot


5-DOF Vehicle Mechanical Arm  The Ruins Gap Search Robot  Quadruped Bionic Robot  Head and Neck Robot
We have successfully developed the precise operation of separation system for vitro cancer cell based on robotic automation and computer vision technologies.
Apply precise stabilization technique and implant prosthesis development in pelvic tumor resection and pelvic ring structure reconstruction

Develop key equipment and laboratory for artificial joint product performance test

Develop a new type of ultra low wear and polyethylene joint
Combination of medicine and Engineering -
Active rehabilitation

Cooperating with Shanghai electric group and Huashan hospital, we develop the second generation of rehabilitation robot prototype. Dr. Med.Karl, the father of neural rehabilitation medicine in German, personally involved in the robot test.
Combination of medicine and Engineering-
Active rehabilitation

The prototype of brain computer interactive rehabilitation medical equipment has been developed independently.

The first trial was successfully carried out in stroke patients at Huashan hospital, and it has been tried in more than 40 hospitals, such as Beijing Tiantan hospital, and Shanghai Ruijin hospital.
We won the third prize in the second China Brain Computer Interface (BCI China 2015) Competition which is sponsored by the National Natural Science Foundation of China and hosted by Tsinghua University.
Combination of Medicine and Engineering-Frontier technology/Biological 3D Printing

2014 International Industry Conference and Exposition of 3D Printing

Biological 3D printing composite molding system

Aired in the science and education channel CCTV-10

Stent implantation in rats after 8 weeks
Focusing on ubiquitous energy and its application field, aiming at major national strategic demands and researching on the fundamental theory, technical breakthrough and commercialization of research outcomes, based on Control Science and Engineering.

Three characteristic research directions are formed based on the "front - central - end" core technology chain.
“Plateau” Discipline of Shanghai - Mechanical Engineering

“Plateau” discipline was chosen and developed based on the major national demands.

Construction of “Plateau” Discipline Featuring Intelligent Manufacturing

Four Directions of Constructions

1. The Technology of Advanced Robot
2. Equipment and System of Intelligent Manufacturing
3. New Photoelectric Interface Control and Micro-Nano Manufacturing of Display
4. Biological 3D Printing and Cell Operation, Measurement

Mechanical Engineering

The Construction of Disciplines

- Machinery and Electronics Engineering
- Automation and Machinery Manufacturing
- Mechanical Design and Theory
- Additive manufacturing and tissue repair

Key Laboratory of the Ministry of Education
Robot Industrialization Base of National 863 Program
Key Laboratory of Shanghai
Engineering Technology Research Center of Shanghai
Robot Research Center of Shanghai
Precision Machinery Research Institute of Shanghai University
CIMS and Robot Center
School of Mechatronic Engineering and Automation

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Tel: 021-56337148
Web Site: http://www.auto.shu.edu.cn