上海交通大学
SHANGHAI JIAO TONG UNIVERSITY

2021 SJTU ONLINE GLOBAL SUMMER SCHOOL

Program Overview

SJTU welcomes undergraduate and graduate students from all over the world to study in Shanghai, one of the most dynamic cities in China. This summer, we invite you to enhance your academic credentials, advance your career, and explore your interests.

The 2021 Global Summer School provides excellent opportunities for students to learn about China through academic and cultural immersion. A wide range of courses in various disciplines are provided, including Public Policy and City Governance, Practice in Restoring Chinese Historical Buildings, Digital Innovations and Smart Construction, and Machine Intelligence and Robotics, each of which will be accompanied by Chinese language courses.

In addition to academic lectures, local excursions, cultural activities, and field trips are also available for International students. From these extracurricular activities, students will learn more about Chinese culture, history, politics, and the latest developments in the country. This is a chance to experience Chinese culture firsthand and to make friends from China and all around the world.

Join us this summer and discover how SJTU can help you realize your potential!

→ **Eligibility**

A. Students from overseas, Hong Kong, Taiwan, and Macao must be enrolled as an undergraduate or graduate student before applying for this program.

B. Students from non-English speaking countries should provide an English language proficiency certification. Either an IELTS (no less than 6.0), TOEFL (no less than 79 points), or TOEIC (no less than 800 points). If you are studying in an all-English-taught program, you must provide relevant certifications.

C. Other prerequisites may be required by each course.

→ **Application Process**

Create an ID and password — Complete Online Application (By April 30) — Receive your results within two weeks after completing your applicaiton — Payment (By May 29)

A. Please apply via the following website :
http://apply.sjtu.edu.cn
The following items must be uploaded to the online application:
- A scan of the ID page of the student's passport. The passport must be valid for at least 6 months for the visa application.
- ID photo（Similar to a passport photo）
- Curriculum vitae (CV)
- Motivation letter
- Language proficiency certificate (If applicable)

B. Applicants can only attend one course across the program.

C. In regards to free placements for applicants from university-level exchange partners, please contact the International Office of your home university for more detailed information.

→ **Course Schedule**

A. Lectures will be held in the morning, and field trips or company visits will be arranged during the afternoons from Monday to Thursday. The Chinese language and culture courses will be conducted every Tuesday and Thursday afternoon. There are no classes on Fridays. Cultural trips will be arranged for weekends.

B. If the number of participants is less than 20 students, the course will be canceled. If this is the case, students will be notified via the website by the 1st of May, 2021. Students have two course choices when filling the online application, if the first course is canceled, the applicant will be automatically reassigned to the second course.

C. Please check our website for the updated version of the schedule of each course.

→ **In addition to excellent lectures, you will also experience the following when joining the program:**

>   Airport pickup service
>   Welcome reception
>   Cultural shows
>   Field trips
>   Unique cultural experiences
>   Integration with local students

→ **Credit**
Session A: 2 Credits
Session B: 3 Credits

→ **Important Dates**

	Session A	Session B
Duration	2021.7.8-2021.7.23	2021.7.8-2021.7.30
Application period	2020.12.1-2021.4.30	2020.12.1-2021.4.30
Application deadline	2021.4.30	2021.4.30
Registration & dormitory check-in	2021.7.8 8:30am-5:00pm	2021.7.8 8:30am-5:00pm
Welcome reception	2021.7.9	2021.7.9
Courses begin	2021.7.12	2021.7.12
Courses end	2021.7.23	2021.7.30
Dormitory check-out	2021.7.24 8:30am-5:00pm	2021.7.31 8:30am-5:00pm

→ **Fees**

	Session A	Session B
Application fee	RMB 400(USD 60)	RMB 400 (USD60)
Tuition fee	RMB 5000(USD 760)	RMB 7500 (USD 930)
Total	RMB 5400(USD 820)	RMB 7900(USD990)
Payment deadline	2021.5.29	2021.5.29

The culture trip fee is not included in the tuition fee.

→ **Refund Policy**

**The application fee is non-refundable.

Withdrawal is defined as the dropping of an entire academic program. All students who drop their academic program before May 29, 2021 will not be charged. [1]

Cancellation Date	Remarks
By May 29,2021	Full refund
By July 9,2021	50% refund
After July 9, 2021	No refunds

→ **Announcement**
You will be notified of the result through our website, and an email within two weeks of completing the application.

→ **Accommodation**
The 2021 Global Summer School will be conducted at two campuses: Xuhui and Minhang. Students can choose on-campus or off-campus accommodation depending on the location of their course.

For on-campus accommodation, room reservations should be made online at dorm.sjtu.edu.cn and the accommodation fee will be paid online. All the students who will live in the on-campus accommodation should obey the accommodation regulatory rules of SJTU. Due to limited on-campus accommodation, students can also choose off-campus accommodation.

More detailed information regarding the accommodation reservation will be released once you have been admitted to Global Summer School.

For more information, please contact the International Student Service Center
Minhang Campus: issc_minhang@sjtu.edu.cn +86-21-34203955
Xuhui Campus: issc_xuhui@sjtu.edu.cn +86-21-62933305

[1] All cancellation requests must be sent to isc.mobility@sjtu.edu.cn.

Visa

→ **Visa**

SJTU will provide students with JW 202 and admission notice. Applicants should bring the visa paperwork, admission notice, JW 202 form, and a valid passport to the local Chinese embassy or consulate to apply for a short term student visa (usually the visa type "X2"). Students from visa-waiver-country shall also hold a valid student visa (X2 type visa) for entry. Those who are already in China need to submit a copy of the visa page, residence registration notice, and all of the above application documents to the PCB in Shanghai after registering at SJTU.

The JW 202 form and the admission notice will be sent to the applicant via an international courier within two weeks after April 30, 2021.

* If you are a local student from Hong Kong, Macao, or Taiwan, you do not need the JW202 form.

→ **Insurance**

Students who plan to attend this program should obtain insurance before studying in China. Each student must present the insurance certificate to the administrative staff on the day of registration.

→ **Transcript**

Official transcripts will be sent out in September to the mailing address you indicated in your application.

Students who wish to transfer credits need to obtain pre-approval from the relevant authorities at your home universities.

→ **Certificate**

An official certificate will be issued to the student who completes the course by the University.

→ **Contact**

Email: isc.mobility@sjtu.edu.cn
Website: http://summerprogram.sjtu.edu.cn/

CONTENT

2021
SJTU
GLOBAL
SUMMER SCHOOL

SESSION A

SESSION B

S021
Discover China

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

This course provides you with an overview of key social, cultural, political, and economic areas for understanding the changes and challenges of contemporary China, and will be taught from a multi-disciplinary perspective. We will arrange visits to the Shanghai Urban Forest Research Station to demonstrate the metropolis' ecological balance strategy, and SJTU's advanced laboratories to exchange opinions with professors about the most promising technologies in the future. This program provides students with the critical and essential tools to understand how to do business in China through a combination of subject-specific modules, company visits, and cultural activities. Students who attend this program do not only take part in an unforgettable experience but also gain skills that will equip them for global success.

Highlights »

> Understand China's development process from the perspective of Shanghai's globalization.
> Discover how business in China works.
> Learn about traditional Chinese medicine and culture and learn how to make sachets.
> Study at SJTU to experience campus and daily Chinese life.
> Exchange ideas by communicating with students from different countries.

Instructors »

Prof. Zhaoyang ZHANG
Email: zzy001@sjtu.edu.cn
Zhaoyang Zhang acquired his Ph.D. in history from the University of California at Berkeley and is a professor in the Department of History. He has published several important articles in leading academic journals and taught various history courses in English.

Assoc. Prof. Chongsheng PENG
Email: cspeng@sjtu.edu.cn
Dr. Chongsheng Peng, associate professor at the school of pharmacy at the Shanghai Jiao Tong University (SJTU), is an expert in both the SJTU general education courses and storehouses of the China Association of Pharmaceutical Education (CAPE). He received his Ph.D. at the West China University in medical science and a bachelor's degree from the Anhui University of Chinese Medicine. He was a visiting scholar (2005-2006) at the Institute of Molecular Bioscience (IMB) at the University of Queensland. Additionally, his course "Traditional Chinese Medicine & Chinese Culture" has been regarded as a key course for general education in Shanghai since April 2015 and at SJTU since 2012. The course is also available globally on four MOOC platforms including Coursera, China MOOC (CNMOOC), Zhihuishu, and Ewant. The English version of this course was successfully developed to be the first international course with blended learning for the universities at 21 summer school in 2016 and has attracted more than 130 online students and 65 students participating in offline hands-on practices from 18 universities in 9 countries.

Assoc. Prof. Shan YIN
Email: yinshan@sjtu.edu.cn
Dr. Shan Yin is an associate professor at the school of agriculture and biology at Shanghai Jiao Tong University since 2012. He got his MD and Ph.D. in environmental engineering at Shanghai Jiao Tong University and used to work at the Institute of Urban and Regional Development, the University of California Berkeley as a joint Ph.D. researcher. He is the vice director of the Shanghai Urban Forest Research Station and the State Forestry Administration. His work focuses on long-term monitoring of urban forests, air pollutants, and climate change.

Assessment
Attendance: 50%
Assignment: 30%
Final presentation: 20%

Contact
Program Coordinator: Ziyi JIA (zyjia@sjtu.edu.cn)

S022

China's Public Policy and City Governance

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

This course focuses on current important issues in Chinese political development and government reform with an interdisciplinary approach to examining China. Through seminars, field trips, and other activities, students have the opportunity to experience traditional Chinese culture and conduct an in-depth analysis of public policy with Chinese experts. It covers the following areas:

> Public policy analysis
> Shanghai governance case studies, including a field trip visiting the City Planning Exhibition Hall or urban communities
> Traditional cultural activities, such as DIY dumplings and calligraphy.

Highlight »

> 8 lectures from distinguished experts from home and abroad to share their latest research results on public policy and city governance.
> 2 field trips to the Shanghai City Planning Exhibition Center and urban communities.
⊠ Group research experience with Ph.D. students.
> Cultural trips during the weekend to experience the local culture.
> By the end of this 2-week study, students should have basic knowledge and understanding of public policies and city governance in Shanghai and China.

Instructors »

Prof. Bo PENG
Email: bpeng@sjtu.edu.cn

Professor Bo PENG got his Ph.D. degree from Fudan University, and his main research fields include local politics, urban study, and public policy analysis. He published two books: Village Governance: State Intervention and System Selection (China Society Press, 2002), and Path Dependence and Governance Choice: The Urban Community Reform in Contemporary China (China Society Press, 2007), three translations, and over 50 articles in the Journal of Asian Pacific Studies, China Perspective, Political Science Research, etc.

Assoc. Prof. Huirong CHEN
Email: pkuhuirong@gmail.com

Huirong Chen is an associate professor at the School of International and Public Affairs at Shanghai Jiao Tong University. He received his Ph.D. in political science from the University of Hong Kong. He was a China Public Policy Postdoctoral Fellow at Harvard Kennedy School from 2015 to 2017. He has also served as a civil servant at the General Office of the Chinese Communist Party Shanghai Municipal Committee from 2006 to 2007. His research interests include Chinese politics, comparative politics, and political economy.

Assoc. Prof. Fan YANG
Email: fanyoung99@163.com

Dr. Fan YANG is an associate professor with a sociology and social work background. In the past years, he has been keen on investigating how urbanization is associated with Chinese older people's mental health (e.g. depression, Alzheimer's) and how to design interventions both at the family and community level. His other research interests include long-term care and urban poverty.

Dr. Tingting LU
Email: tingting.lu@sjtu.edu.cn

Tingting Lu joined Shanghai Jiao Tong University in 2017. She attained her Ph.D. in Urban Planning from the Bartlett School at the University College London. She holds an MSc degree in International Planning and Development at Cardiff University. Her research interest is in housing and land development during the suburbanization and regeneration processes in China. She has also participated in researching China's low carbon city planning and energy transition at UCL. Her academic work has been published in journals such as Urban Studies, Geoforum, and Urban Geography.

Dr. Yuan TIAN
Email: yuantian@sjtu.edu.cn

Dr. Yuan Tian is currently an assistant research professor at the School of International and Public Affairs at Shanghai Jiao Tong University. She earned her doctoral degree in philanthropic studies from the Lilly Family School of Philanthropy at Indiana University in 2018. She was also selected as the CSCI doctoral fellow for the summer program at the University of Pennsylvania in 2017. Dr. Tian has rich teaching and research experiences in philanthropic studies and nonprofit management and has publications in both SSCI and CSSCI journals.

Dr. Yana ZUO
Email: zuoyana@sjtu.edu.cn

Yana Zuo is an assistant professor at the School of International and Public Affairs, Shanghai Jiao tong University, China. She is the author of Evolving Identity Politics and Cross-Strait Relations: Bridging Theories of International Relations and Nationalism (Palgrave Macmillan US, 2016). Her publications also appeared in International Affairs, Global Discourses, and other prestigious journals.

Assessment
Attendance: 30%
Participation in discussion: 20%
Group presentation: 50%

Contact
Program Coordinator: Ms. Sai LI
(saili1@sjtu.edu.cn)

S023

China's Climate Change, Energy and Environmental Policies

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

This course explores the challenges associated with climate change, energy, and environmental policies from multiple perspectives, disciplines, and scales. It provides an in-depth insight into what happened across the globe and particularly in China after Trump retreated from the Paris Agreement. Students will be trained to examine the evolving science and policy of climate change, tussles among big global emitters regarding commitments and responsibility, and the conflicts between energy giants and interest groups in China. Parallel to that, China's energy and environmental policies will be scrutinized in the context of global and domestic politics. Through various case studies, students are encouraged to grasp the nature of China's national development strategies and the risks and challenges the country is facing in implementing its "green policies". At the same time, students will be expected to apply theories of IPE while conducting analyses.

Highlights »

> Understand the interaction between politics and economics, especially in a Chinese context.
> Understand the economic dimension of foreign policy and international politics regarding energy and environmental issues.
> Understand the interaction between mitigation, energy efficiency, and technology innovation.
> Integrate different stakeholder perspectives, disciplines, scales, and geographic contexts in evaluating China's mitigation efforts, energy, and environmental policies.
> Understand China's developmental approach and the shift from a GDP-orientation to a more balanced development.
> Develop both oral and written communication skills to facilitate systematic analysis and effective consideration of these complex issues.

Instructors »

Prof. Yong GENG
Email: ygeng@sjtu.edu.cn

Prof. Dr. Geng is currently a chair associate of the School of International and Public Affairs at SJTU. He serves as a lead author for both IPCC AR5 and AR6. He is a national consultant for UNIDO and has published over 240 papers in international journals, including Science, Nature, Nature-Climate Change, and Science Advances. His research fields are circular economy, low carbon development policy, and environmental management.

Dr. Tingting LU
Email: tingting.lu@sjtu.edu.cn

Tingting Lu joined Shanghai Jiao Tong University in 2017. She attained a Ph.D. in Urban Planning from the Bartlett School at the University College London. She holds an MSc degree in International Planning and Development at Cardiff University. Her research interest is housing and land development during the suburbanization and regeneration processes in China. She has also participated in researching China's low carbon city planning and energy transition at UCL. Her academic work has been published in journals such as Urban Studies, Geoforum, and Urban Geography.

Assoc. Prof. Huijuan Dong
Email: donghj@sjtu.edu.cn

Huijuan Dong is an associate professor at the School of Environmental Science and Engineering, Shanghai Jiao Tong University. Her research is focused mainly on environmental management, industrial ecology & circular economy, and low carbon development in China. Up to now, she has published more than 53 high-quality SCI/SSCI journals with 5 being the ESI (Essential Science Indicators) highly cited papers. She is a principal investigator of two research projects funded by the National Natural Science Foundation (NSFC), and a sub-PI of a project funded by the Ministry of Science and Technology. She has also been invited as the subject editor and best reviewer of a special issue in the Journal of Resources Conservation & Recycling. She is also an anonymous reviewer for more than 20 famous international SCI journals.

Assessment
Attendance: 30%
Participation in discussion: 20%
Group presentation: 50%

Contact
Program Coordinator: Ms. Sai LI
(saili1@sjtu.edu.cn)

S024

Practice in Restoring Chinese Historical Buildings

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

The course will provide students with excellent opportunities to understand Chinese architectural heritage and participate in architectural restoration. The course is divided into a general section and a practical section. The general knowledge includes a brief history of Chinese architecture, case study, the introduction of common deterioration of the historical structure and nondestructive testing techniques; the practical part includes field research, traditional craft study, construction simulation, building disease detection on situ, and restoration practice.

The faculty of this course is composed of professors, scholars, and craftsmen in the field of historical building protection. The course is featured by a large number of practices and the students can participate in each step of architecture restoration.

Highlights »

Tours visiting traditional Shanghai towns.

Visiting excellent examples of building restoration and renovation.

Laboratory analysis of traditional material deterioration.

Field practice of architectural restoration, collaborating with craftsmen.

Instructors »

Prof. Yongkang CAO
Email: ykcao@sjtu.edu.cn
Bachelor's and master's at Xi'an University of Architecture and Technology, Ph.D. at Zhejiang University, a visiting professor at Università Iuav di Venezia (IUAV) and the University of Florence. Cao engages in heritage architecture and relics conservation, and his works include books such as New exploration of Shanghai industrial heritage and over hundreds of heritage architecture conservation projects including conservation planning, individual conservation planning, reversion research, pseudo-class architecture, etc.
Representative works: the Chongsi building conservation design of Xuhui High School in Shanghai, the reversion of Xu Guangqi's cemetery (Ming dynasty) in Shanghai, the ancient cultural site conservational planning for Fuquan mountain, the Lv Fu conservational planning and individual building conservational design in Shaoxing, the emergency repair design after the earthquake of Tianshi Cave in Qingchen mountain of Dujiangyan, Sichuan city, the renovation for Chuangshan central street in Shanghai, the Chinese garden design in Dunedin, New Zealand, etc.

Dr. Qian DU
Email:qian.du@sjtu.edu.cn
Researcher at the Department of Architecture, School of Design. Her research focuses on conservation theory, techniques of restoration, and the application of GIS in built heritage conservation. The publication includes several papers in professional journals and articles in Cultural Relics Management Review, Heritage Sites in Contemporary China Cultural Policies and Management Practices, etc.

Assessment
Attendance: 20%
Visit report: 30%
Final presentation and discussion: 50%

Contact
Program Director and Coordinator: Prof. Yongkang CAO (ykcao@sjtu.edu.cn)

S025

Discovering Shanghai: Past and Future
——The Story of Li-Long

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

The city of Shanghai is like a vibrant living body. Looking down from a height: the criss-cross road is like an artery, dividing the city into several specific areas; small passages formed a community, which are densely covered with the whole city like capillaries. For these small passages and lanes, locals in the Jiangnan region calls it "Li-Long". But one thing makes Li-Long famous in the world is because of the rise of a large number of early-modern Li-Long Residential Buildings. Therefore, this course aims to discover the culture and hidden stories of Shanghai Li-long through an architect, landscape architect, and urban designer's perspective, highlighting the conservation and renovation of Shanghai regional culture.

Highlight »

> Directly points to conservation and renovation of Shanghai regional culture.

> Stressing on low-impact design, minimizing the damage to the original construction and features of Li-Long residential area.

> Fascinating field trips to public spaces in Shanghai such as Shikumen, one of the most representative Li-Long residence style where the sophisticated Shanghainese lived until the early 1930s.

> Sufficient opportunities for cross-disciplinary group work and intercultural communication.

> In-depth interaction with local residents and actively involved in their daily life.

> By the end of this 2-week study experience, students will acquire basic knowledge and understanding of the rich history, flourishing present, and bright future of architecture and landscape of Shanghai.

Instructors »

Prof. Xing RUAN
Email: x.ruan@sjtu.edu.cn

Xing RUAN is the Dean and Guangqi Chair Professor of Architecture at School of Design, Shanghai Jiao Tong University. He is a member of the Shanghai Jiao Tong University Academic Committee. He joined UNSW Sydney as a professor of architecture in 2004. He has been the Associate Dean International (2015-2018), Director of Architecture (2014-16), Chair of Architecture Discipline, and Director of Master of Architecture (2005-09). Before his appointment to UNSW, he was the Head of the Department of Architecture at the University of Technology Sydney (2002-04). He teaches architectural design, history, and theory. He has been invited to give a keynote and public lectures at conferences and universities in China, South-East Asia, India, the USA, the UK, Italy, New Zealand, Argentina, and Australia.

Prof. Shengquan CHE
Email: chsq@sjtu.edu.cn

Shengquan CHE is a doctoral supervisor and the Vice Dean of the School of Design, Shanghai Jiao Tong University. He is also the Director of Sustainable Ecological Design Center and Deputy Director of Key Lab of Urban Agriculture of Ministry of Agriculture and Rural.
He is a member of the National Master of Landscape Architecture Education Steering Committee and a member of the Landscape Architecture Committee, Chinese Society for Urban Studies. His research areas include the education and research of landscape ecological planning and design, landscape evaluation and protection, the relationship between structures and functions of urban-rural green space ecosystems, the evaluation of green space ecosystems, as well as relevant ecological planning, technology development, and policy-making.

Prof. Lin WANG
Email: wanglinalice@sjtu.edu.cn

Lin WANG is a professor of Architecture Department in the School of Design, Shanghai Jiao Tong University, a researcher of China Urban Governance Institute, and the Director of the Center for Urban Studies focusing on regeneration, preservation, and innovation of cities. She was a Loeb Fellow 2009 at Harvard University. She has been intensively involved in key urban planning initiatives, including the preservation and regeneration of Shanghai's historical areas and industrial areas. Her research directions include Urban Design, Urban Regeneration, Urban Heritage Preservation, Urban Planning, Urban Management, Landscape.

Prof. Yun WANG
Email: wangyun03@sjtu.edu.cn

Yun WANG is a professor of Landscape Architecture, and the head of the Department of Landscape Architecture at the School of Design, Shanghai Jiao Tong University. He has a multi-disciplinary background in landscape planning and design and architecture. His research interests lie in landscape architecture history and theory, the application of traditional Chinese garden arts, waterfront landscape planning and design, landscape protection and evaluation, theoretical research, and practice of urban landscape refinement regulation and planning. In the practice of landscape planning and design, he emphasizes innovative fusion of tradition and modernity. He has led more than 200 practical projects, published more than 40 papers, 4 books, 1 patent of invention, and more than 20 awards of landscape planning and design.

Prof. George FRANTZ
Email: frantz@cornell.edu

George Frantz is an associate professor in the Department of City and Regional Planning at Cornell University, where he teaches classes in land use planning and community development and environmental impact review. His primary areas of expertise are in urban design and master planning, with particular emphasis on green infrastructure and the protection of agriculture and environmentally sensitive lands and water resources. In addition to teaching, he has over 30 years of experience in planning and design consulting for municipal governments in New York state. Frantz received his B.S. in landscape architecture and his M.R.P. from Cornell University in 1980 and 1991 respectively.

Dr. Dan CHEN
Email: danchen.gator@sjtu.edu.cn

Dan CHEN is the Program Director of Master of Landscape Architecture (International) and in charge of undergraduate courses including preliminary design, landscape planning and design, and planting design at the School of Design, Shanghai Jiao Tong

University. She obtained her Ph.D. in Landscape Architecture from the University of Florida. Her major research areas are landscape planning and design, ecological protection and restoration, classical Chinese gardens, and urban green space issues.

Dr. Qian DU
Email: qian.du@sjtu.edu.cn

Qian DU is a researcher at the Department of Architecture and Program Director of Master of Architecture(International) of School of Design, Shanghai Jiao Tong University. Her research focuses on conservation theory, techniques of restoration, and the application of GIS in built heritage conservation. The publication includes several papers in professional journals and articles in Cultural Relics Management Review, Heritage Sites in Contemporary China Cultural Policies and Management Practices, etc.

Assessment
Attendance: 20%
Participation in Discussion: 20%
Field Trip & Group Work: 30%
Final Design Project: 30%

Contact
Program Director: Prof. Shengquan CHE (chsq@sjtu.edu.cn)
Program Coordinator: Ms. Siyi CHEN (siyichen@sjtu.edu.cn)

S026

Technology to Shape the Future of Media & Entertainment in China

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

China has seen rapid growth in the entertainment industry in recent years. It is forecast to rise at a compound annual growth (CAGR) of 8.8% over the coming five years, compared to global with a GAGR of 4.4%. As the country with the largest number of Internet users, based on the fact that the New Internet Technology is profoundly changing the entertainment and media industry, from content production to content distribution, the business operation is facing rapidly shifting, opportunities and challenges.

The program aims to help the overseas students to understand the booming media and entertainment industry in China, especially the emerging technology from media, movies, music, games, and creative copyright trading. It provides students with an interdisciplinary vision of technology, creativity, and management. Additionally, it offers opportunities to visit representative enterprises and communicate with founders or executives face to face.

Highlights »

> International faculty focusing on the integration of production and education; the main source of teachers are experts from the creative, media, and technology of the transboundary field. Faculty members are scholars or industry representatives from the United States, Germany, China, and other global cultural and creative industries, combining the academic and industrial perspectives.

> The practice of interdisciplinary teaching concept; the course presents the production methods of new content and new business models driven by technology in China's media and entertainment industry from different perspectives.

> Industry research opportunities for top companies; industry sharing and corporate visits in the course include Tencent, IQIYI, Bytedance (Tik Tok and Toutiao), Himalaya, Dianping, and other top Internet media and entertainment companies in China.

Assessment
Attendance: 15%
Participation in question discussion: 20%
Assignment: 30%
Final program summary: 35%

Contact
Program Director: Prof. Sherwood HU
(sherwoodhu@sjtu.edu.cn)
Program Coordinator: Judy LIU
(jcliu@sjtu.edu.cn)

Instructors »

Prof. Sherwood HU
Email: sherwoodhu@sjtu.edu.cn
Sherwood Hu, "one of the most exciting and dynamic directors that emerge from China" (Kirt Honeycutt, Hollywood Reporter). Born and raised in Shanghai in a creative and artistic family, Sherwood relocated to the US to study for his Masters of Arts degree at New York State University and earned a Ph.D. in directing from the University of Hawaii at Manoa. He also studied at The Public Theater in New York under Joseph Papp and began his professional career directing in theatre, including productions of Rashomon, Constant Prince, and The Chairman's Wife. Hu created The Legend of Prince Lanling, a lavish stage production set in ancient China; this received an Honorable Mention Award from the Kennedy Arts Center. In 1998, Francis Ford Coppola and Wayne Wang were executive producers of his second feature, one of the first co-productions between American and China. Lani Loa - The Passage was a Hawaiian ghost story/cop movie/spiritual love story, shot in Shanghai and Hawaii, and starred Angus Macfadyen, Ray Bumatai, and Chris Tashima. Prince of the Himalayas (2007), his adaptation of Shakespeare's Hamlet, set in ancient Tibet, and performed entirely in the Tibetan language. The film received numerous awards including best picture, best director, and best actor in several international film festivals. Honored with the title of "Eastern Scholar" a distinguished professor, he was invited by Shanghai TV station's Art and Culture channel hosting the only film critique program Hu on Silver Screen since 2009. And he was the artistic director of the 2010 World Expo Shanghai Pavilion, which is one of the most popular pavilions in the Expo.

S027

Digital Innovations and Smart Construction

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Course Description »

This course aims to provide students with an understanding of the development of digital and smart technologies and their applications in the architecture, engineering, and construction (AEC) industry. It encompasses 3D printing, 3D/5D BIM, automation in construction, and artificial intelligence. Through introducing the state-of-the-art technologies and showcasing several successful real engineering cases, this course intends to illustrate how AEC should respond to the challenges and opportunities those new technologies may bring to the sector.

Highlights »

> This course is jointly run by the Institution of Civil Engineers (ICE), the oldest learned society in Civil Engineering in the world, which will offer excellent teaching resources. Participating students will have the opportunity to register as the Student Member and benefit from the wide-ranging learning resources.

> A first-class delivery team comprising of world-class academics and industrialists rich in global experience in the subject area.

> Well-mixed delivery methods including class-teaching, virtual reality simulation, site/office visits, group project, and hand-on activities.

> A visit to the world's second-tallest building, Shanghai Tower located in Shanghai, and to see how BIM has been used in the design, construction, and maintenance phases.

> A visit to the world's first 3D printed building.

> Experience interviewing the project management team of the Shanghai Disney Project, one of the world's most complicated projects.

> Two site visits including one smart city exhibition center and a global company specialized in industry 4.0.

> Tours of Shanghai city and its municipal construction together with a visit to the Shanghai Construction Museum.

> Experience of working on a real-life global project mentored with the practitioners from the most renowned consultancy companies in the world.

> Have social network activities with the Students/Graduates/Chartered Members of ICE around the world.

Instructors »

Prof. Jian YANG
Email: j.yang.1@sjtu.edu.cn
Prof. Jian Yang, Assistant Dean in the School of Naval Architecture, Ocean and Civil Engineering at Shanghai Jiao Tong University, has nearly 20 years of experience in teaching, research, and consultancy at various universities/companies, most of which were from the UK. He is one of the youngest Fellows of the Institute of Civil Engineers (ICE) and a chartered member of the Institute of Structural Engineers (MIStructE). He serves on several international and national professional committees and sits on the editorial board for four peer-reviewed international journals. In his present role, he is leading a team mainly focusing on the research in the field of sustainable construction materials and novel structural systems including sustainable and smart construction. He has published more than 100 papers. In 2016, he was awarded as one of the '10 Kaiyuan Lecturers'.

Assessment

Attendance and professionalism: 30%
Project presentation and Q&A: 30%
Report: 40%

Contact

Program Director: Prof. Jian YANG
(j.yang.1@sjtu.edu.cn)
Program Coordinator: Dr. Bai LI
(baili888@hotmail.com)

S028

Green Technology for Environmental Pollution Control

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Minhang

Course Description »

Environmental Pollution Control using green technology is one of the sustainable ways, which could not only solve environmental pollution but also save energy and resources. The course uses multidisciplinary theories and methods to expound on the relationship, connotation, and principles between the environment and sustainable development. To interpret the relationship between economic and social development with environmental protection, energy conservation, and emissions reduction, China will be chosen as the case study, as the most populous and rapid urbanization process country. The development process of water resources, waste sector, soil reclamation, and air pollution control will be introduced in detail, so students can understand the drivers and the development of the shift from the industrial civilization development model to the modern ecological civilization.
The students in this course should be devoted to the lessons, including debates, group discussions, study tours, and listening and answer questions.

Highlights »

>   Half-day tour of Nanxiang Sewage Treatment Plant.

>   Half-day tour of Environmental Theme Park of Suzhou River Mengqing Garden.

>   Half-day tour of Shanghai Urban Planning Exhibition Hall.

>   Half-day tour of Shanghai Xinjinqiao Environmental Protection Company, which is the biggest electrical and electronic waste treatment based in Shanghai.

Instructors »

Prof. Yixin ZHAO
Email: yixin.zhao@sjtu.edu.cn
Yixin Zhao is a professor at Shanghai Jiao Tong University. He obtained a Ph.D. degree from Case Western Reserve University in 2010, followed by working as a postdoctoral fellow at Penn State University and National Renewable Energy Laboratory. His current research interests focus on perovskite solar cells, photoelectrochemical catalysis, and environmental remediation. Professor Zhao is on the editorial board for several journals and co-author of over 100 reviewed publications with more than 6000 citations.

Assessment
Attendance: 20%
Participation in question discussion: 20%
Visit report: 30%
Final program summary: 30%

Contact
Program Director: Prof. Yixin ZHAO (yixin.zhao@sjtu.edu.cn)
Program Coordinator: Ms. Chenjing BAO(baochenjing@sjtu.edu.cn)

S029

Frontiers in Biomedical Engineering

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Minhang

Course Description »

In light of emerging techniques in biomedical engineering, especially in the field of neural technologies, we plan to organize the 2021 international summer school of Frontiers in Biomedical Engineering (FBME) & the 5th IEEE EMBS International Summer School of Neural Engineering (ISSNE). The ISSNE started in 2013 in Shanghai as a platform for networking the future leaders in biomedical engineering, aiming for introducing the latest development of cutting-edging biomedical technologies, particularly the neurotechnologies. In combining with FBME in 2021, we are going to organize a 2-week program including the tutorials, seminar talks, laboratory practice as well as Chinese cultural activities.
The FBME-ISSNE will use the unique platforms as its teaching support, i.e. the huge clinical hospital system of Shanghai Jiao Tong University. With 12 top-ranked affiliated general and specialized hospitals, and the largest outpatient number and hospital admission number in China, SJTU has its uniqueness in bench-to-bed clinic-driven research and teaching. Students will have face-to-face meetings and discussions with the experts from the departments of neurology, radiology, and neuroimaging centers, and get the opportunities of onsite training on translational neural engineering in these affiliated divisions.

Highlight »

> Cutting-edge techniques in biomedical engineering, the lectures cover the latest development in biomedical engineering technologies, delivered by leading scientists in these areas.
> Field trips to biomedical companies, research centers, or clinical hospitals; The students will visit our affiliated or partner biomedical research centers, companies, and clinical hospitals, experiencing the new how the new technologies are changing the human's life and healthcare.
> Hand-on laboratory practices; The school will offer the students opportunities for laboratory practice.

Instructors »

Prof. Shanbao TONG
Email: stong@sjtu.edu.cn
Shanbao Tong received his B.S. degree in radio technology from Xi'an Jiao Tong University (Xi'an, China) in 1995, and M.S. degree in turbine machine engineering and Ph.D. degree in biomedical engineering from Shanghai Jiao Tong University (Shanghai, China) in 1998 and 2002 respectively. From 2000-2001, he was a research trainee at Johns Hopkins School of Medicine, and 2002-2005, he had postdoctoral training at Johns Hopkins School of Medicine. His Ph.D. dissertation was on EEG signal processing in brain injury following cardiac arrest and was awarded the top 100 distinguished Ph.D. dissertations of China (2004). Dr. Tong joined Shanghai Jiao Tong University as an associate professor in 2005 and has been a full professor since 2009. He established the neural engineering laboratory. His research interests include neural signal processing, cognitive neural engineering, optical neurovascular imaging, brain connectivity, and stroke rehabilitation.
Dr. Tong is the founding chair of the IEEE EMBS Shanghai chapter which was awarded the Best New Chapter of IEEE EMBS (2013), and he is also the founding chair of the IEEE EMBS international summer school of neural engineering starting from 2013 biennially. Dr. Tong was the Associate Editor of IEEE TBME and is still an active Associate Editor of IEEE TNSRE, Deputy Editor of Medical & Biological Engineering & Computing, and Board Member of the Chinese Society of Neural Engineering. He was the conference chair of the 2017 IEEE EMBS international conference of neural engineering.

Prof. Yao LI
Email: yaoli118@gmail.com
Dr. Yao Li received her B.S. degree from Shanghai Jiao Tong University in 2002, and her Ph.D. degree from the State University of New York at Stony Brook in 2008. She then worked at the Stony Brook medical center as a postdoctoral associate. She joined the School of Biomedical Engineering at Shanghai Jiao Tong University as an associate professor in 2010. She is currently the assistant dean of the Institute for Medical Imaging Technology at Shanghai Jiao Tong University. Dr. Li was supported by many research agencies including the National Science Foundation in China, Ministry of Science and Technology, Ministry of Education of China, and Shanghai Municipal Science and Technology Committee, etc. She is the associate editor of BMC Neuroscience and guest editor of Stem Cells International. She is the senior member of the Institute of Electrical and Electronics Engineers (IEEE), a member of the International Society for Magnetic Resonance in Medicine (ISMRM), and a member of the Organization of Human Brain Mapping (OHBM). Her research interests include ultrahigh-resolution magnetic resonance spectroscopic imaging, multimodal functional magnetic resonance imaging, and clinical study in brain function and disorders.

Assessment
Attendance: 15%
Participation in question discussion: 20%
Visit report: 30%
Final program summary: 35%

Contact
Program Director: Prof. Shanbao Tong (stong@sjtu.edu.cn)
Program Coordinator: Ms. Hillary Shang (shangli@sjtu.edu.cn)

S0210

Precision Agriculture and Future

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Minhang

Course Description »

This course aims to introduce precision agriculture research and application in China to participants and further to the world, including the development, current status, and the future of Chinese and Shanghai's precision agriculture. The goal is to show an overview of the development and discuss the potentials in the future.

Highlights »

> This course takes different forms such as lectures and field trips, to give an overview of the development and application of precision agriculture in Shanghai, China.
> The lectures are elaborated by agricultural science experts who have rich overseas education, working, or teaching experiences, providing a professional course design.
> Cultural elements are woven into the lectures and field trips to help participants comprehend the background information and development condition of China, Chinese agriculture, and precision agriculture development here.
> By the end of this 2-week study experience, students should have basic knowledge and understanding of the rich history, flourishing present, and bright future of precision agriculture in Shanghai, China.

Instructors »

Prof. Chunlei SHI
Email: clshi@sjtu.edu.cn
Professor Chunlei SHI has presided over fifteen research projects, including an NSFC Fund, an NSFC Young Fund, an NSFC-Guangdong Joint Fund, a Project in the National Key R&D Program of China, a Project in the National Sci & Tech Pillar Program, and several projects from Science and Technology Commission of Shanghai Municipality. She has published 72 papers (43 papers were SCI indexed) and participated in compiling 5 books. She has also taken part in applying for 25 patents and 15 patents have been issued.

Assoc. Prof. Hongbo GAO
Email: hongbo.gao@sjtu.edu.cn
Dr. Hongbo GAO is a Tenure Track Associate Professor in the School of Agriculture and Biology, Shanghai Jiao Tong University. He received a Ph.D. in Science of Plant Physiology and Ecology, SIBS, CAS, and did postdoc work at John Innes Centre. His study interests include epigenetic regulation of plant development.

Assoc. Prof. Ruohe YIN
Email: ruohe.yin@sjtu.edu.cn
Dr. Ruohe Yin is an Associate Professor in the Department of Plant Science, School of Agriculture and Biology, SJTU. He is awarded the National 1000 Young Talents Program and Shanghai Pujiang Talent Plan. As an independent group leader, the group uses Tomato and Arabidopsis Thaliana as model plants in the lab, applying various approaches to unravel UV-B light signal transduction pathways extending from the photoreceptor to signaling cascades and target genes and proteins important for metabolic homeostasis, plant shape, and architecture determination.

Assoc. Prof. Shunshan JIAO
Email: sjiao@sjtu.edu.cn
Dr. Shunshan JIAO is an Associate Professor in the Department of Food Science and Engineering, School of Agriculture and Biology, SJTU. He received a Ph.D. at Washington State University. His research interests include radiofrequency disinfestation/pasteurization of low moisture foods, hot air-assisted radiofrequency roasting of nuts, and novel drying technologies for postharvest fruits and vegetables.

Assoc. Prof. Shan YIN
Email: yinshan@sjtu.edu.cn
Dr. Shan YIN is an Associate Professor in the Department of Resource and Environment, School of Agriculture and Biology, SJTU. He also serves as Vice-director of the Shanghai Urban Forest Ecosystem Research Station (SUFERS), owns fellowships in the Ecological Society of Shanghai, and fellowships in the Soil and Nutrition Society of Shanghai. His research interests are ecosystem services and long-term monitoring in the urban area, and biogeochemical cycling and ecological models.

Assoc. Prof. Jingjin ZHANG
Email: jj.zhang@sjtu.edu.cn
Dr. Jingjin Zhang is an Associate Professor in the Department of Plant Science, School of Agriculture and Biology, SJTU. She received her Ph.D. at Washington State University. Her research interests include facility environments and its regulation and biological response of horticultural crops and the rapid detection technology of crop information.

Assoc. Prof. Nan HUI
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Dr. Nan Hui is an Assoc. Professor in the Department of Resource and Environment, School of Agriculture and Biology, SJTU. He received Ph.D. at the University of Helsinki. His research interests include urban agriculture and ecology, environment and health, solid waste treatment, etc.

Assistant Researcher Wei LU
Email: wei.lu@sjtu.edu.cn
Dr. Wei LU is an Assistant Researcher in the Department of Food Science and Engineering, Shanghai Jiao Tong University. He received a Ph.D. at the University College Cork. His research interests include biomacromolecule and structure and function of food colloid.

Assistant Researcher Yu GAO
Email: yugao@sjtu.edu.cn
Dr. Yu GAO is an Assistant Researcher at the Center for Viticulture and Ecology, SJTU. He received a Ph.D. at Stellenbosch University, South Africa.

Assessment
Attendance: 30%
Participation in discussion: 20%
Group presentation: 40% (15 minutes each group)
Final program summary: 10% (more than 500 words)

Contact
Program Director: Ms. Jiaoyue LIU
(liujiaoyue@sjtu.edu.cn)
Program Coordinator: Ms. Dan WANG
(danwang17@sjtu.edu.cn)

S0211

Outlook of Future Techniques in Aerospace Engineering

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Minhang

Highlights »

> **University-enterprise cooperative curriculum:** Field trips to Commercial Aircraft Corporation of China, Ltd. (COMIC, big plane manufacturer) and AECC Commercial Aircraft Engine Co., Ltd (commercial aircraft engine manufacturer), AVIC institutes, and Honeywell Shanghai.

> **The resources at a world-class university:** The world's top faculties; SJTU research labs; SJTU Qian Xuesen Library & Museum.

> **Internationalization of engineering education:** To adopt new engineer training models. To pursue cultural integration, resource integration, and discipline integration.

> By the end of this 2-week study experience, students should have basic knowledge and understanding of the rich history, flourishing present, and bright future of Aerospace Science and Technology Development.

Instructors »

Prof. Xingqun ZHAN
Email: xqzhan@sjtu.edu.cn
Professor Xingqun Zhan received his B.S. and M.S. from Harbin Engineering University, China, and his Ph.D. from Harbin Institute of Technology, China in 1999. He is currently a tenured professor on navigation and associate dean of the International of the School of Aeronautics and Astronautics at Shanghai Jiao Tong University. His research focuses on Global Navigation Satellite Systems (GNSS) integrity/vulnerability, seamless positioning, and GNSS/Inertial coupling. Dr. Zhan is the associate editor of Journal Aerospace Science & Technology and the associate editor of Journal Aerospace Systems. He has co-chaired the United Nations International Committee of GNSS (ICG) Performance Enhancement Work Group (WG-B) since 2015.

Course Description »

This course aims to introduce aerospace engineering innovation in China to participants and further to the world, including the history, development, current status, and the future of this field. Besides the professional courses, the culture of China and Shanghai will also be introduced. The goal is to establish an "International Trend, Global Demand, Chinese Strategy, Shanghai Strength, and SJTU brand" through the 2-week summer school.

In particular, participants will learn the basics of aerospace engineering through lectures, aerodynamic demonstrations, and experiments in a lab setting. Students will have a tour of SJTU research labs and learn how experimental data is collected in different research fields in aerospace engineering. Various experiments will be conducted on plane models. They will also interact with our brilliant faculty, graduate researchers, and undergraduate students in this field.

Assessment
Attendance: 15%
Participation in class: 35%
Final program summary: 50%

Contact
Program Director: Prof. Xingqun ZHAN
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Program Coordinator: Shan GAO
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S0212

Reversing
Climate Change

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Xuhui

Instructors »

Prof. Meng ZHOU
Email: meng.zhou@sjtu.edu.cn

Meng Zhou is a seagoing oceanographer in physical and biological oceanography. He received his Bachelor in Engineering from Tsinghua University in 1982, a Master in Physical Oceanography from the Chinese Academy of Sciences in 1984, and a Ph.D. in Oceanography from Stony Brook University in 1992. He worked at Scripps Institution of Oceanography as a research scientist, the University of Minnesota as an Assistant Professor, and the University of Massachusetts Boston as a tenured Associate and Full Professor; possessed Part-Time Professor and Researcher positions at the University of Tromsø (The Arctic University of Norway) and University of Marseille; and joined Shanghai Jiao Tong University since 2013 as Zhiyuan Chair Professor and the Dean of the Institute of Oceanography. Professor Zhou received an EU Marie Curie People Fellow in 2007, Chinese Taishan Scholar in 2009, French Chair of Excellence in 2010, Chinese National 1000 Talent Experts in 2012, and Shanghai 1000 Talent Experts in 2013. He worked on numerous interdisciplinary projects from coupled advection and behavioral processes of marine organisms, transport of nutrients and biota, and plankton population dynamics, numerous integrations of physical and biological sensors for high-speed measurements at same times and locations with same resolutions, and numerous cruises from the New York Bight, California Current, West Pacific Ocean, Norwegian fjords and shelf regions, Barents Sea, Southern Indian Ocean, Southern Ocean, and the South China Sea. His research areas include transport of nutrients and biota, nature iron fertilization processes, aggregation behavior of marine organisms, and population dynamics.

Course Description »

The course will start from the earth history and basic earth processes of heat flux and balance, atmospheric and ocean circulation, heat storage and carbon flux, causes and history of global climate change, summarize anthropogenic CO_2 contributions from developing agriculture, deforesting, industries, and metropolitan cities; review existing zero-CO_2 emission technologies of renewable electricity, fuel and heat, and agriculture; find innovative technologies for removing CO_2 in air, soil and oceans, and discuss our strategies for the future.

Highlight »

> Learn the history of the earth and its basic processes.
> Learn the histories of climate change, causes, and processes.
> Understand the relationships between populations, socioeconomics, science and technologies, environment, and climate.
> Learn zero CO_2 release technologies of renewable energy and agriculture.
> Learn CO_2 removal methods in air, soil, and oceans.

Assessment
Attendance: 20%
Participation in question discussion: 40%
Final report: 40%

Contact
Program Director: Prof. Meng ZHOU
(meng.zhou@sjtu.edu.cn)
Program Coordinator: Jie WEN
(jwen007@sjtu.edu.cn)

S0213

AIoT and AR/VR

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Minhang

Course Description »

AIoT:

The AIoT course lasts for 16 hours. It includes AI + Internet of Things content architecture, theory + experiment teaching method.

In the part of AI, the history and current situation of AI are introduced, as well as its future development trend, machine learning preparation knowledge, common algorithms, the development of neural networks and commonly used deep learning algorithms, and how to integrate with the Internet of Things.

The Internet of Things section mainly introduces Huawei's basic knowledge of the Internet of Things and related products and Huawei's Internet of Things solutions. It systematically introduces Huawei's IoT connection management platform, Huawei's Internet of Things operating system, and Internet of Things communication technology NB-IoT, which integrates Huawei's cloud-tube-end curriculum system. Experiments mainly involve how to use Huawei Internet of Things platform Ocean Connect, communication technology NB-IoT, operating system Huawei LiteOS to develop the Internet of Things case. Taking smart agriculture as the main case, the development process of the Internet of Things project is explained in depth.

VR/AR:

Virtual reality (VR) and augmented reality (AR) technology, which can visually bring people the digital 3D interaction experience, is the frontier development direction in the field of information technology.

This course will learn the effective 3D interaction techniques to make VR applications and write the necessary code in Unity 3D. It not only explores the features to make an application successful，but also covers the mathematics and computer graphics required for rendering onto a screen.

This course is an introductory course to the engineering practice of virtual reality and augmented reality, which will lead students to get in touch with VR/AR knowledge and develop students' interest in VR/AR field. In this course, students will understand the basic principles, design methods, and develop methods of VR/AR. They will learn to use VR/AR software and hardware tools, including different display and interaction devices, such as VR/AR glasses, handles, orientation trackers, and so on, and the mainstream VR/AR 3D software development engines.
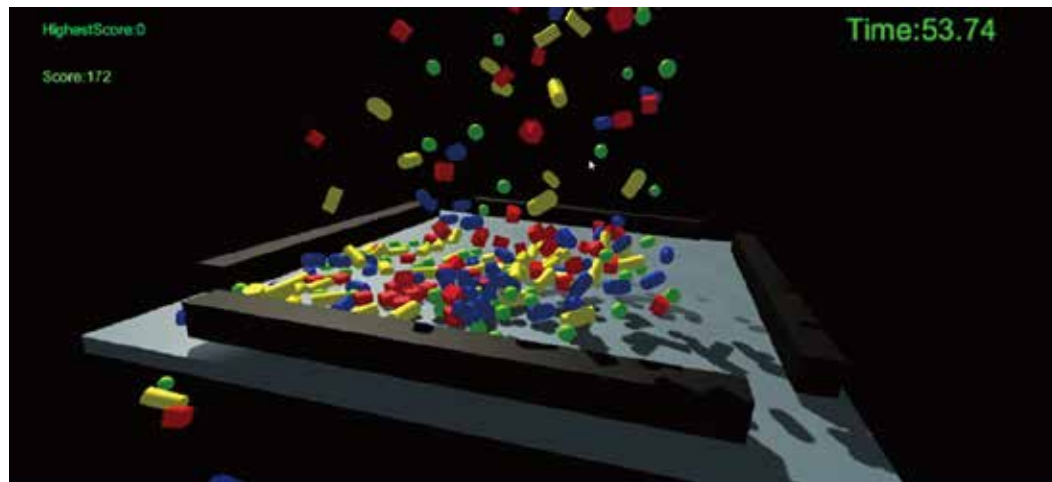
By the end of the classes, you will have a strong foundation to develops apps in all areas of VR.
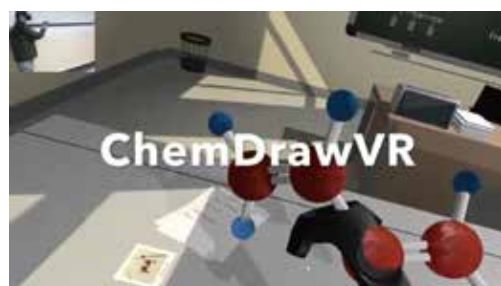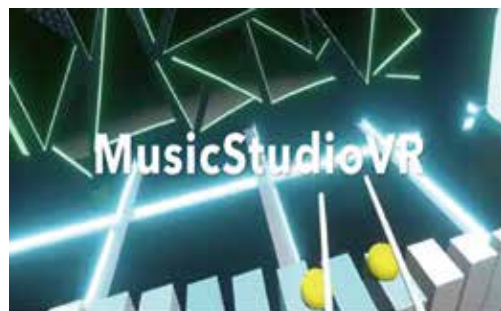
Highlights »

AIoT: By the end of this 16 hours study experience, students will be able to understand the basic architecture of the Internet of Things, and be able to practice and implement a simple application system of the Internet of Things.

VR/AR:
Both Single assignments and group assignments are very interesting

3 persons a group to accomplish a big assignment

One set of HMD for one group

Instructors »

Prof. Jiangping CHEN
Email: jpchen@sjtu.edu.cn

Prof. Jiangping CHEN is the Director of the Student Innovation Center and a Professor of the Refrigeration and Cryogenics Institute. His research interests include automotive air conditioning technology, microchannel heat exchanger technology, and electronic cooling technology. In related fields' he has published nearly 300 academic papers and owned more than 30 authorized national invention patents. Besides, He has received many awards including the National Science and Technology Progress Award second prize once, provincial level and ministerial level Science and Technology Progress Award first prize twice, second prize four times, Prof. Chen is an expert on the United Nations Environment Program, an expert in the Refrigerant Substitution Group of the Ministry of Environmental Protection, a member of the National Professional Standardization Technical Committee, and the director of Shanghai Engineering Research Center of NEV Thermal Management System and Shanghai High Efficient Cooling System Research Center.

Prof. Yuzhuo FU
Email: yzfu@sjtu.edu.cn

Prof. Yuzhuo Fu vice director of student Innovation center, and leading the Innovative Computer Architecture and Technology Lab (iCAT) at Dept. of Micro/Nano Electronics, SJTU. He received a B.S. degree from the Computer Engineering Department at Changsha Institute of Technology, and M.S. and Ph.D. degrees from the Computer Science and Engineering Department, Harbin Institute of Technology. Before joining SJTU in 2001, he worked as a Senior Engineer for the electric engineering institute of Heilongjiang University and Computing Center of Heilongjiang Province. He is a Present Deputy Professor of the undergraduate student affairs office of SJTU. His research interests include fault-tolerant architecture, heterogeneous system architecture, and edge computing architecture. Especially focused on application-driven design/architecture innovations, which include novel architectures for artificial intelligence (AI) and acceleration with CPU/GPU/FPGA.

Assessment
Attendance: 20%
Project: 80%

Contact
Program Director: Mrs. Yuerong TONG
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Program Coordinator: Mrs. Yancong MA
 (yancongma@sjtu.edu.cn)

S0214

Blockchain and its Application in Energy Internet

Duration:
2021.7.8-2021.7.23
(2 weeks)

Campus:
Minhang

Course Description »

Blockchain is a decentralized ledger that can enable trustworthy systems at large scales. A copy of the ledger is stored by each participating party and synchronized using a consensus algorithm, making the ledger transparent and robust against cyberattacks. While these technologies have already significantly impacted the financial industry (e.g., Bitcoin), they also have many applications to the power and energy society.

Applications of blockchain in the energy sector include automatic energy transactions, power system asset ownership tracking, etc. Several demonstrations have been deployed around the world, such as the peer-to-peer energy transaction project deployed in Brooklyn, NY, by LO3Energy, the PowerLedger project backed by the Australian government, and Enerchain joined by a large number of European utilities. Hopefully, it will revolution-ize the way that energy transactions and power system asset tracking is performed, bring opportunities for numerous small-scale players.

This course aims to help students learn the basic knowledge of blockchain, explore some typical applications of blockchain technology in the energy sector, build blockchain-enabled energy trading simulation platforms; visit some related pilot projects in Shanghai, and lay the foundation for students to explore further applications. The summer course will provide a good opportunity to network with people working in the field, meet prominent researchers, share best practices, and establish contacts through social interactions that may lead to research collaborations in the future.

Highlight »

> Learn the basics and state-of-the-art of blockchain.
> Learn related applications in the energy sector.
> Build (toy) blockchains by themselves.
> Visit a blockchain-based energy internet pilot project in Shanghai.
> Explore and develop new blockchain applications.

Instructors »

Dr. Sijie CHEN
Email: sijie.chen@sjtu.edu.cn
Sijie Chen is currently an Assistant Professor in the Department of Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China. He received his B.E. and Ph.D. degrees in electrical engineering from Tsinghua University, Beijing, China, in 2009 and 2014, respectively. His research interests include energy blockchain, demand response, transactive energy system, and the electricity market. He is the chair of the IEEE PES SBLC blockchain working group and a co-chair of the IEEE PES SBLC load aggregator and distribution market working group.

Dr. Keyou WANG
Email: wangkeyou@sjtu.edu.cn
Keyou Wang received the B.S. and M.S. degrees in electrical engineering from Shanghai Jiao Tong University, Shanghai, China, in 2001 and 2004, respectively, and the Ph.D. degree from the Missouri University of Science & Technology (formerly University of Missouri-Rolla) in 2008. He is currently a Professor and the Vice Department Chair of Electrical Engineering with Shanghai Jiao Tong University. His research interests include power system dynamics and stability, renewable energy integration, and converter dominated power system. He serves as an Associate Editor of IET Generation Transmission & Distribution.

Dr. Zheng YAN
Email: yanz@sjtu.edu.cn
Zheng Yan received the B.S. degree in electrical engineering from Shanghai Jiao Tong University, Shanghai, China, in 1984, and the M.S. and Ph.D. degrees in electrical engineering from Tsinghua University, Beijing, China, in 1987 and 1991, respectively. He is a Professor of Electrical Engineering with Shanghai Jiao Tong University. His current research interests include the application of optimization theory to power systems and power markets and dynamic security assessment.

Dr. Donghan FENG
Email: seed@sjtu.edu.cn
Donghan Feng received the B.Sc. and Ph.D. degrees from the Department of Electrical Engineering, Zhejiang University, Hangzhou, China, in 2003 and 2008, respectively. He has been with the faculty of Shanghai Jiao Tong University (SJTU), Shanghai, China, since 2008, where he is currently a full Professor, and also serves as the Deputy Director of the State Energy Smart Grid Research and Development Center. His current research interests include operation and trading strategies in smart energy networks.

Dr. Xiaoyuan XU
Email: xuxiaoyuan@sjtu.edu.cn
Xiaoyuan Xu received both the B.S. and Ph.D. degrees in electrical engineering from Shanghai Jiao Tong University, Shanghai, China, in 2010 and 2016,

respectively. He is currently an assistant professor at Shanghai Jiao Tong University. He is also a Visiting Scholar with the Illinois Institute of Technology, Chicago, IL, USA. His research interests include power system uncertainty quantification and power system optimization.

Dr. Yong YAN
Email: yio1986@gmail.com
Yong Yan received the B.S. and the M.S. degrees from Chongqing University, Chongqing, China, and South China University of Technology, Guangzhou, China, in 2006 and 2009, respectively. He is currently working in State Grid Zhejiang Electric Power Corporation Research Institute, China. His current research interests are blockchain, artificial intelligence, and power system.

Dr. Xinyi LE
Email: lexinyi@sjtu.edu.cn
Xinyi Le received a B.E. degree in microelectronic mechanical engineering and a B.S. degree in mathematics from Tsinghua University, Beijing, China, in 2012, and the Ph.D. degree in mechanical and automation engineering from the Chinese University of Hong Kong, Hong Kong, in 2016. She is a Lecturer with the School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, China. Her current research interests include neural networks, distributed optimization, robust control, and intelligent manufacturing.

Dr. Xiaobi TENG
Email: tengxiaobi@163.com
Xiaobi Teng received a Ph.D. degree in electrical engineering from Tsinghua University, Beijing, China, in 2012. He is currently with the East China Branch of State Grid Corporation of China. His research interests include power system dispatch and cyber-physical-human systems.

Assessment
Attendance: 20%
Midterm presentation: 40%
Final program summary: 40%

Contact
Program Director: Sijie Chen
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Program Coordinator: Sijie Chen
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S031

Machine Intelligence and Robotics

Duration:
2021.7.8-2021.7.30
(3 weeks)

Campus:
Minhang

Course Description »

This course, Machine Intelligence and Robotics, aims for providing both overview and practice techniques for artificial intelligence, specifically its applications on robotics, as well as on the manufacturing process. In this course, theory and methods for machine learning, robotics, and networks with multi-agents will be given. Together with practical courses on industrial automation systems programming and intelligent robotics, the students could gain a range of theoretical and practical skills necessary to develop real intelligent systems. The summer course will provide a good opportunity to know people working in the field, to meet prominent researchers, share best practices, and to establish contacts through social interactions that may lead to research collaborations in the future.

Highlight »

> The courses will be given by interdisciplinary researchers. All the lectures hold a Ph.D. degree from universities abroad or have more than 3 years' working experience abroad. External lectures from famous institutes will be involved as well.
> The students will have the chance to study theoretical knowledge as well as to apply algorithms to real systems.
> Hand-on labs of programming industrial control systems and robotics, including the Institute of Pattern Recognition and Image Processing, Autonomous Robot Lab, Center for Intelligent Wireless Networking, all of which belong to the Key Laboratory of Ministry of Education. The students will explore these top Chinese labs by visiting colloquia and potential joint projects.
> Tours for intelligent industrial companies in Shanghai, including Tencent, Rockwell Automation, Siemens AG, Huawei, and Hikvision, which cover artificial intelligence and applications in the modern industry.

Instructors »

Prof. Jie YANG
Email: jieyang@sjtu.edu.cn

Prof. Jie Yang is the Director of the Image Processing and Pattern Recognition Institute, Shanghai Jiao Tong University. He received his Ph.D. degree in computer science from the University of Hamburg, Germany. He has led many research projects (e.g., National Science Foundation, 863 National High Tech. Plan), has one book published in Germany, and 5 monographs. He has published more than 300 SCI papers and obtained six provincial and ministerial level achievement awards.

Prof. Yuemin ZHU
Email: yue-min.zhu@insa-lyon.fr

Prof. Yuemin Zhu is a permanent Research Director of the CNRS (Centre National de la Recherche Scientifique) of France. He received his B.Sc. degree in telecommunication in 1982 from Huazhong University of Science and Technology (HUST), China, M.Sc. degree in 1984, and Ph.D. in 1988 from the INSA, Lyon, France. He obtained the "Habilitation à Diriger des Recherches" in 1993, France. He received the French National Center for Scientific Research (CNRS) lifelong researcher, the French National Institute of Applied Sciences Professor Yue-min Zhu. He obtained the French National Outstanding Scientific Research Award in 2010 and 2014, and the French Knight Medal in January 2016.

Prof. Hesheng WANG
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Prof. Hesheng Wang received his Ph.D. degree in Automation & Computer-Aided Engineering from the Chinese University of Hong Kong, Hong Kong in 2007. From 2007 to 2009, he was a Postdoctoral Fellow and Researcher Assistant in the Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong. He joined Shanghai Jiao Tong University as an Associate Professor in 2009. Currently, he is a Professor at the Department of Automation, Shanghai Jiao Tong University, China. He worked as a visiting professor at the University of Zurich in Switzerland. His research interests include visual serving,

service robot, robot control, and computer vision. He was a recipient of the Shanghai Rising Star Award in 2014 and was awarded Outstanding Youth Foundation from NSFC in 2017.

Assoc. Prof. Xiaolin HUANG
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Dr. Xiaolin Huang received his Ph.D. degree from Tsinghua University in 2012. From 2012 to 2015, he worked as a postdoctoral researcher in KU Leuven, Belgium. Afterward, he was selected as an Alexander von Humboldt Fellow and working in Pattern Recognition Lab, the Friedrich-Alexander-University Erlangen-Nuremberg, Germany, where he was appointed as a group head. Since 2016, he has been an Associate Professor at Shanghai Jiao Tong University, Shanghai, China. In 2017, he was awarded the "1000-Talent" (Young Program).

Assoc. Prof. Jianping HE
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Dr. He received his Ph.D. degree in Control Science and Engineering at Zhejiang University, China, in 2013. Since then, he has been a research fellow in Communication Networks Lab (CNLAB) at The University of Victoria, Canada. He is now an Associate Professor at Shanghai Jiao Tong University. In 2018, he was awarded as "1000-Talent" (Young Program).

Assoc. Prof. Xiang YIN
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Dr. Yin received a Ph.D. degree in Electrical Engineering Systems at the University of Michigan, 2017. Since then, he joined the Department of Automation, Shanghai Jiao Tong University in 2017, where he is currently an Associate Professor. In 2018, he was awarded as "1000-Talent" (Young Program).

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Dr. Yu Qiao received his Ph.D. degree from the National University of Singapore in 2004. Since 2010, he has been an Associate Professor at Shanghai Jiao Tong University. His research topics cover artificial Intelligence and intelligent instruments. He received a "Certificate of Merit" from the Radiological Society of North America (RSNA).

Assoc. Prof. Wenbin DAI
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Dr. Wenbin Dai is an Associate Professor at Shanghai Jiao Tong University, China. He received his Ph.D. in Electrical and Electronic Engineering at the Department of Electrical and Computer Engineering, the University of Auckland, New Zealand in 2012. He was a Postdoc Fellow at Lulea University of Technology, Sweden from 2013 to 2014. He was also a software engineer from Glidepath Limited – a New

Zealand-based airport baggage handling system provider from 2007 to 2013. His research interests are IEC 6931-3 PLC, IEC 61499 function blocks, industrial cyber-physical systems, semantic web technologies in industrial automation, and industrial software agents.

Assistant Prof. Yue GAO
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Dr. Yue Gao received her Ph.D. degree in Computer Science from Cornell University in 2016. After that, she joined Shanghai Jiao Tong University as an Assistant Professor. Her research lies at the intersection of artificial intelligence, machine learning, and how it can affect computing and robotics.

Assistant Prof. Xiao YU
Email: xyuxyu@sjtu.edu.cn

Dr. Xiao Yu received her Ph.D. degree in Mechanical and Biomedical Engineering from the City University of Hong Kong in 2017. After that, he joined Shanghai Jiao Tong University as an Assistant Professor. His research is mainly for multi-agent systems, mobile robotics, control theory, and applications.

Assessment

Attendance: 20%
Lab Report and Assignment: 40%
Final Project Presentation: 40%

Contact

Program Director: Prof. Jie Yang (jieyang@sjtu.edu.cn)
Program Coordinator: Assoc. Prof. Xiaolin Huang (xiaolinhuang@sjtu.edu.cn)

Course Description »

This course, Artificial Intelligence Principles and Applications, aims for providing both overview and practice techniques for artificial intelligence, specifically its theory and applications on computer vision, natural language processing, data mining, as well as robotics. In this course, theory and methods for machine learning, optimization will be given. Furthermore, lab and homework sessions will be provided on each topic. The purpose of this course is to help students develop a range of theoretical and practical skills in artificial intelligence. The summer course will provide a good opportunity to communicate with prominent researchers and learn the recent development of artificial intelligence.

S032

Artificial Intelligence
Principles and Applications

Duration:
2021.7.8-2021.7.30
(3 weeks)

Campus:
Minhang

Highlights »

> The students will have the chance to learn about theory and methods for a range of fields of artificial intelligence, including computer vision, natural language processing, data mining, as well as robotics.

> The students will explore the SJTU Artificial Intelligence Institute and the Key Laboratory of Artificial Intelligence Ministry of Education, both are top Chinese labs in the field of artificial intelligence, by visiting, colloquia, and potential joint projects.

> By the end of summer school, students will have basic knowledge and understanding of artificial intelligence, obtain a range of theoretical and practical skills, and establish contacts through social interactions that may lead to research collaborations in the future.

> Students will visit world-famous artificial intelligence-related companies, including Huawei, Tencent, Ant Financial, etc, and have a clearer understanding of the development of this field.

Instructors »

Prof. Xiaokang YANG (IEEE Fellow)
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Xiaokang Yang received a Ph.D. degree from Shanghai Jiao Tong University in 2000. He is currently a Distinguished Professor of the School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China. His research interests include visual signal processing and communication, media analysis and retrieval, and pattern recognition. He serves as an Associate Editor of IEEE Transactions on Multimedia and an Associate Editor of IEEE Signal Processing Letters. Prof. Yang is also a fellow of IEEE.

Prof. Hai ZHAO
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Hai Zhao is a professor in the Department of Computer Science and Engineering, Shanghai Jiao Tong University. His research interests are natural language processing, machine learning, artificial intelligence. He is an ACM professional Member, a technical committee member of Chinese Information Technology in China Computer Federation, a vice-director of the AI Technical Committee in the Shanghai Computer Federation. He has published more than 120 papers, including nearly 60 CCF-A/B papers. His Google scholar cited is nearly 2,200. He served as ACL 2017 Program Committee Area Chair of Tagging, Chunking, Syntax and Parsing and ACL 2018 & 2021 Program Committee Area Chair of Phonology, Morphology, and Word Segmentation Area.

Prof. Hongyuan ZHA
Email: zha@cc.gatech.edu

Hongyuan Zha is a Professor at the School of Computational Science and Engineering, College of Computing, Georgia Institute of Technology, and Shanghai Jiao Tong University. He earned his Ph.D. degree in scientific computing from Stanford University in 1993. Since then he has been working on information retrieval, machine learning applications, and numerical methods. He is the recipient of the Leslie Fox Prize (1991) of the Institute of Mathematics and its Applications, the Outstanding Paper Awards of the 24th International Conference on Advances in Neural Information Processing Systems (2013), and the Best Student Paper Award of the 34th ACM SIGIR International Conference on Information Retrieval (SIGIR 209). He was an Associate Editor of IEEE Transactions on Knowledge and Data Engineering.

Prof. Xiaofeng GAO
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Xiaofeng Gao received the B.S. degree from Nankai University, China, in 2004, the M.S. degree from Tsinghua University, China, in 2006, and the Ph.D. degree from The University of Texas at Dallas, USA, in 2010. She is currently a Professor with the Department of Computer Science and Engineering, Shanghai Jiao Tong University, China. Her research interests include data mining and network optimization. She has won the best paper awards seven times, including DASFAA2017, ICPADS2016, etc.

Prof. Cewu LU
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Cewu Lu is an associate professor at Shanghai Jiao Tong University. Before he joined SJTU, he was a research fellow at Stanford Artificial Intelligence Laboratory working under Prof. Fei-Fei Li and Prof. Leonidas J. Guibas. In 2016, he was selected as the National "1000 Youth Talents Plan". In 2018, he was selected as 35 Innovators Under 35 (MIT TR35) by MIT Technology Review. In 2021, he was awarded Qiu Shi Outstanding Young Scholar. He has published more than 60 papers at top conferences and Journals, including CVPR/ICCV/PAMI, etc. His research interests fall mainly in Computer Vision, deep learning, and has made many innovative contributions in these fields. He serves as the program chair of CVM2018, and Area Chair of CVPR 2021.

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Li Jiang is an associate professor in the Department of Computer Science and Engineering, Shanghai Jiao Tong University. He received a Ph.D. degree from the Dept. of CS&E, the Chinese University of Hong Kong in 2010 and 2013 respectively. He received the best paper nomination in ICCAD and got the best Ph.D. Dissertation Award at ATS 2014, and was in the final list of TTTC°Øs E. J. McCluskey Doctoral Thesis Award. He serves as co-chair and TPC member in several international and national conferences, such as DATE, ASP-DAC, ITC-Asia, ATS, CFTC, CTC, etc. His current research interests include Computer Architecture and algorithm design technology to accelerate AI-based application, approximate computing for energy efficiency, hardware system design automation, and reliability and performance enhancement using machine learning techniques.

Prof. Junchi YAN
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Junchi Yan is currently an associate professor at the Department of Computer Science and Engineering and AI Institute of Shanghai Jiao Tong University. He is also the co-director for the prestigious SJTU ACM Class. His research interests are machine learning, data mining, and computer vision. He serves as an Associate Editor for IEEE ACCESS, (Managing) Guest Editor for IEEE Transactions on Neural Network and Learning Systems, Pattern Recognition Letters, Pattern Recognition, Vice Secretary of China CSIG-BVD Technical Committee, and on the executive board of ACM China Multimedia Chapter. He has published 40+ peer-reviewed papers in top venues in AI and has filed 20+ US patents. He has once been with IBM Watson Research Center, Japan NII, and Tencent/JD AI lab as a visiting researcher. He won the Distinguished Young Scientist of Scientific Chinese for the year 2018 and CCF Outstanding Doctoral Thesis.

Assessment
Attendance: 20%
Quiz: 10%
Lab report and Assignment: 40%
Final Project Presentation: 30%

Contact
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Prof. Yanmin QIAN
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Yanmin Qian is an associate professor at Shanghai Jiao Tong University, China. He received his Ph.D. from the Department of Electronic Engineering from Tsinghua University, China in 2012. He joined the Department of Computer Science and Engineering at Shanghai Jiao Tong University in 2013. He was one of the key members to design and implement the Cambridge Multi-Genre Broadcast Speech Processing system, which won all four tasks of the first MGB Challenge in 2015. He is a senior member of IEEE and a member of ISCA, and one of the founding members of the Kaldi Speech Recognition Toolkit. He has published more than 100 papers on speech and language processing with 4000+ citations, including T-ASLP, Speech Communication, ICASSP, INTERSPEECH, and ASRU. His current research interests include acoustic and language modeling in speech recognition, natural language understanding, deep learning, and multimedia signal processing.

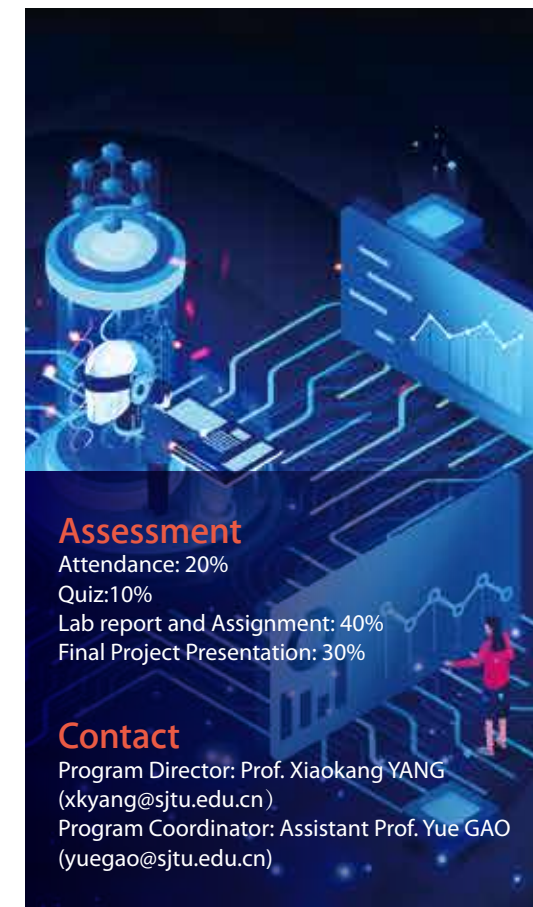**Assoc Prof. Manhua LIU**
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Manhua Liu is currently an associate professor of the School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China. She received her Ph.D. degree in 2007 from Nanyang Technological University, Singapore. She joined Shanghai Jiao Tong University in 2008. Her research interests include multimodality image processing and fusion, brain image intelligent computing and analysis, fingerprint recognition, and machine learning and pattern recognition. She has published more than 20 SCI journal papers. Prof. Liu is a member of IEEE.

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Dr. Yue Gao received her Ph.D. degree in Computer Science from Cornell University in 2016. She later joined Shanghai Jiao Tong University as an Assistant Professor. Her research lies in the intersection of machine learning and robotics.