The Sino-German School for Postgraduate Studies of Tongji University (CDHK) was established 25 years ago, the CDHK had cultivated nearly 2000 outstanding graduates with international outlook and innovative, interdisciplinary competence, who are very popular with international enterprises.

The system of endowed chairs offers students an international environment for learning, which is characterized by high internationalization, close cooperation with enterprises, and close collaboration with industry.

The CDHK is the only international university project in China that has been continuously funded by the DAAD for 25 consecutive years. The Talent training at CDHK is characterized by team cooperation, the CDHK will provide resources of science, research and industry of both countries. Since its establishment, the CDHK has successfully completed a Chinese-German double master degree. And more than 500 students, including nearly 100 international students, have successfully completed a Chinese-German double master degree. And a group of outstanding transnational companies such as Porsche, Bayer, Schaeffler and Infineon are involved in promoting the construction and development of CDHK.

The CDHK accepts about 150 international students from over 20 German and Austrian universities every year, making it one of the Tongji colleges with the highest proportion of international students. Students have the opportunity to enrich their academic experience in higher education.

The CDHK should be regarded as “a successful example of the joint implementation of close cooperation with enterprises for talent training on mutually beneficial basis”. In 2014, Dr. Angela Merkel, the Chancellor of the Federal Republic of Germany, stated that the CDHK is expected to play an important role in promoting cultural exchanges and deepening cooperation between China and Germany.

On the 20th anniversary, WAN Gang, Vice President of the Political Consultative Conference of the Chinese People, and Heiko Maas, Federal Minister of the Federal Foreign Office, sent congratulatory letters in the CDHK anniversary book. In May 2018, CDHK was awarded the title “Second Shanghai Exemplary Sino-Foreign Cooperative Education Institution”. In 2016, President of the People's Republic of China, XI Jinping, gave approval by the highest national leadership and an agreement on cultural exchange and cooperation.

In 2014, the CDHK was awarded the title “Second Shanghai Exemplary Sino-Foreign Cooperative Education Institution”. In 2013, the German Federal Foreign Office pointed out that the Sino-German School for Postgraduate Studies is an important exchange platform for education, research and business between Germany and China, the CDHK is characterized by the following features:

1. Introducing international high-quality educational resources
2. Training international students with China competence
3. Deepening cooperation between education and industry

Several partner universities of the CDHK belong to the German Excellence Initiative or the Excellence Initiative 2005, which will frequently assemble international professor teams and in offering high-level international courses. Moreover, many of these institutions are engaged in promoting the construction and development of CDHK.

The CDHK accepts about 150 international students from over 20 German and Austrian universities every year, making it one of the Tongji colleges with the highest proportion of international students. Students have the opportunity to enrich their academic experience in higher education.

Through refined management and services, the CDHK helps international students to gain a friendly impression of China. The CDHK offers Chinese regional studies in German, holds a series of traditional Chinese folk experience activities, and organizes students' understanding of Chinese culture, economy and society.
Porsche, Bayer, Infineon and VW. The key research areas of the endowed chairs keep mous driving, intellectual property and new energy vehicles with companies such as

03. Deepening cooperation between education and industry

04. Introducing of High-level international faculty

Sino-German Doctoral School of Tongji University

Overview of Sino-German School for Postgraduate Studies

Tongji University Overview

Green Ecological Environment

4.1-Research Areas 1 18/21
Policy and Mechanism

4.2-Research Areas 2 22/31
Intelligent Technology Foundation

4.3-Research Areas 3 32/51
Intelligent Car and Transportation

4.4-Research Areas 4 52/69
Smart Manufacturing and Construction

4.5-Research Areas 5 70/84
Green Ecological Environment
Tongji University Overview

Tongji University is a leading university directly under the State Ministry of Education in China, and is also included in the state-funded Project 211 and the 21st Century Education Rejuvenation Action Plan of China. The history of the university dates back to 1907 when Tongji German Medical School was founded by Erich Paulun, a German doctor in Shanghai. In 1923 it was officially established as a university and in 1927 it was renamed as National Tongji University. It then grew to be a comprehensive university offering programs in science, engineering, medicine, arts and law. In 1952, after the discipline reorganization, Tongji University became the largest and most complete university with strength in engineering, especially in Chinese civil engineering. In 1978, following the Reform and Opening-up Policy in China, Tongji has quickly developed to be a multi-disciplinary university with strength in engineering. Today, with a history of more than 100 years, Tongji has grown into a comprehensive research-oriented university which offers ten major disciplines, namely sciences, engineering, medicine, literature, arts, law, economics, management, philosophy and pedagogy.

Tongji attaches importance to internationalization and has cooperated with Germany, France, UK, USA, Japan, Canada, Italy, Spain and Finland in fields of education, tech-
ology and economics. A number of international joint programs have been established between the university and its counterparts in other countries, such as Sino-German College for Graduate Study and Sino-German College of Applied Sciences, which are sponsored by the Chinese and German governments, Sino-Italian Campus which is sponsored by the Chinese and Italian governments, Sino-French Institute of Engineering and Management cooperated with Paris Tech in France, Tongji-UNEP Institute of Environment for Sustainable Development cooperated with UNEP (United Nations Environment Programme) and Tongji-Australian Institute of Technology.

Tongji makes great effort in developing international students' education. In 2019, registered international students amounted to 3826 in total, and among the long-term international students, about 50% students were to pursue their degrees in various disciplines.

**Faculty:**
Teaching and research staff: 2708; 15 academicians from Chinese Academy of Sciences, 23 academicians from Chinese Academy of Engineering; 945 professors and 1044 associate professors.

**Industrialized Discipline Chain:**
In Tongji, there are 35 colleges/schools offering 75 undergraduate majors. It can grant master degrees in 55 broad academic disciplines, together with 15 professional Master's programs and 26 engineering Master's programs. It also grants PhD degrees in 31 broad academic disciplines with 3 professional PhD programs and 25 post-doctoral mobile research stations. As one of the national key research centers, the university has 38 key laboratories and engineering research centers either at the state level or provincial level. The two industrialized discipline chains/groups are: Urban Construction & Disaster Prevention, covers disciplines of Architecture, Urban Planning, Civil Engineering, Bridge, Energy, Survey, Road, Geotechnical Engineering and Environment. These disciplines are mainly lectured in Siping Road Campus;

Modern Manufacturing, supported by the National Engineering Center, covers disciplines of Clean Energy Vehicle, synergizing Automobile, Rail Traffic, Traffic Engineering, Software Engineering, Management, Material Science, IT and Mechanical Engineering. These disciplines are mainly lectured in Jading campus, which is close to Shanghai International Automobile City.

**Educational Features and Goals: Social Service and Internationalization:**
In recent years, Tongji University has kept exploring and has gradually formed a modern concept on education and school running with Tongji characteristics. Adhering to the education principle that the undergraduate education should be the foundation of the university and the graduate education should be the way to enhance the university, now the university has established the comprehensive quality-oriented education pattern and talent training model that emphasize the integration of “knowledge, ability and personality”. The university sticks to the harmonious development of the four functions of the university, i.e. “talents fostering, scientific research, social service and international communication”. It keeps strengthening its function of serving the society so as to realize the centralization of the university functions. In line with the national development strategy of science and technology and the major demand of the regional economy, Tongji has promoted traditional disciplines to a new level, strengthening the new disciplines, concentrating and simplifying the cross disciplines, and working closely with the industries, so as to form discipline chains and discipline groups that promote the interaction and progress both of the strong disciplines and the weak disciplines, and to build up the discipline system of a comprehensive university. We will constantly promote the education quality, contributing to the national economic and social development.
Overview of Sino-German School for Postgraduate Studies

The Sino-German School for Postgraduate Studies of Tongji University (CDHK) was established in 1998 as an educational institution for international cooperation through approval by the highest national leadership and an agreement on cultural exchange and cooperation between the Chinese and German governments. It brings together the elite resources of science, research and industry of both countries. Since its establishment 25 years ago, the CDHK had cultivated nearly 2000 outstanding graduates with international outlook and innovative, interdisciplinary competence, who are very popular with companies. Of these, more than 500 students, including nearly 100 international students, have successfully completed a Chinese-German double master degree. And over 1500 multinational students participated in exchange programs. 15 world-renowned transnational companies such as Porsche, Bayer, Schaeffler and Infineon are involved in promoting the construction and development of CDHK.

In 2019, the CDHK and the College of Mechanical Engineering, College of Automotive Studies, College of Electronic and Information Engineering and School of Economics & Management of Tongji University jointly established four Sino-German joint research institutions, namely the Sino-German Mechanical Engineering Center, the Sino-German Automotive Joint R&D Center, the Sino-German Intelligent Science and Technology Research Center, and the Sino-German Academy for Economics & Management, to jointly cultivate high-level talents with an international outlook. The four Centers will further expand the cooperation of various disciplines with Germany, and open up a new prospect for the educational exchanges and innovative scientific research.

In 2022, Tongji University integrated its internal resources related to Germany and established the first Sino-German doctoral school in China and the Sino-German Joint Research Center (Tongji University), which was approved by the Ministry of Education. While continuously uniting the relevant colleges, the German elite universities and the well-known enterprises for talent training on mutually beneficial basis, the CDHK was entrusted with the main construction task of both institutions and the mission of transform itself to a higher level Platform.

The CDHK is the only international university project in China that has been continuously funded by the DAAD for 25 consecutive years. The Talent training at CDHK is characterized by high internationalization, close cooperation with enterprises, closet combina-
tion of theory and practice, and cultivated a large number of excellent graduates, who have a high sense of international outlook, social responsibility and innovation. The success of the CDHK has been highly appreciated by Chinese and German leaders frequently.

In 2014, in the “Framework for Action of German-China Cooperation”, which was signed by the Prime Minister of the People’s Republic of China, Li Keqiang, and the Federal Chancellor of the Federal Republic of Germany, Dr. Angela Merkel. It was stated that the CDHK should be regarded as “a successful example of the joint implementation of close sino-german cooperation in higher education”.

In 2016, the CDHK was awarded the title “Second Shanghai Exemplary Sino-Foreign Cooperative Education Institution”.

In 2018, on the 20th anniversary, WAN Gang, Vice President of the Political Consultative Conference of the Chinese People, and Heiko Maas, Federal Minister of the Federal Foreign Office, sent congratulatory letters in the CDHK anniversary book. In May 2018, the Embassy of the People’s Republic of China in Berlin hosted an anniversary celebration for the CDHK. In October, a series of celebrations were held at Tongji University.

In 2020, in “Germany-Europe-Asia: Shaping the 21st Century Together”, the German Federal Foreign Office pointed out that the Sino-German School for Postgraduate Studies is the lighthouse project of German foreign science and technology policy.

In 2021, the DAAD praised Tongji University’s various cooperation and exchange platforms with Germany, including CDHK, as a “bridge between Germany and China”.

As an important exchange platform for education, research and business between Germany and China, the CDHK is characterized by the following features:

01. Introducing international high-quality educational resources
The CDHK introduces world-class educational resources, carries out the discipline construction, curriculum system construction, Engineering practice teaching and the reform on talents cultivation with advanced concept, and supports the relevant disciplines in assembling international professor teams and in offering high-level international courses. Several partner universities of the CDHK belong to the German Excellence Initiative or are members of TU9, such as the Technical University of Munich, the Karlsruhe Institute of Technology, the Technical University of Berlin, the Technical University of Braunschweig and others.

02. Training international students with China competence
The CDHK accepts about 150 international students from over 20 German and Austrian universities every year, making it one of the Tongji colleges with the highest proportion of international students.

Through refined management and services, the CDHK helps international students to gain a friendly impression of China. The CDHK offers Chinese regional studies in German, holds a series of traditional Chinese folk experience activities, and organizes visits to enterprises such as Huawei and CRRC Group to enhance international students’ understanding of Chinese culture, economy and society.
03. Deepening cooperation between education and industry

The system of endowed chairs offers students an international environment for learning and practice. The CDHK has signed or extended endowed chair agreements for autonomous driving, intellectual property and new energy vehicles with companies such as Porsche, Bayer, Infineon and VW. The key research areas of the endowed chairs keep pace with the times and reflect the new trends in economic cooperation between China and Europe.

04. Introducing of High-level international faculty

Famous experts such as the Head of Institute for Machines, Equipment, and Process Automation at KIT, former president of TU-Braunschweig, and the Chairman of the Supervisory Board of Thyssen Krupp are invited to give lectures at the CDHK.
I. Background

Tongji University has a long history and outstanding reputation as one of China’s first class national universities of key importance. It was built in cooperation with the city of Shanghai and is directly administered by the Chinese Ministry of Education. During its long history, the University has developed into a comprehensive, international, research-oriented institution with distinctive features and international influence at home and abroad, ranking among the best universities in China. The history of Tongji University began in 1907 when the Tongji German Medical School was founded by Erich Paulun, a German doctor in Shanghai. The school soon expanded to include engineering programs, after which it was renamed Tongji Medical and Engineering School in 1912. In 1917 Chinese administrators assumed management of the school, renaming it the Tongji Medical and Engineering School, and then as the Private Tongji Medical and Engineering Specialist School. It was formally established as a university in 1923 and was renamed National Tongji University in 1927. Since then, Tongji University has developed into a comprehensive, research-oriented university with study programs in science, engineering, medicine, literature, law, economics, management, art, philosophy and education.

The University has a long history and profound background in Sino-German cooperation. As an important platform for scientific, technological and cultural exchange between China and Germany, Tongji University signed the earliest cooperation agreement between Chinese and German universities in 1980. The Sino-German School for Postgraduate Studies (CDHK), established in 1998, is the first international, partnership-based institution of higher education approved by the top leadership of the country and established on the basis of an agreement on cultural exchange and cooperation between the Chinese and German governments. Subsequently, the University established a series of Sino-German cooperation-based institutions dedicated to such fields as language training, teaching research, talent training, vocational education research, national situation research, cultural exchange etc., and began cultivating extensive cooperative relations with stakeholders in the German education, science, technology and economic sectors.

The University has signed dual-degree agreements with a number of first-class universities and elite schools in Germany, involving 14 colleges or schools and covering a wide range of cutting-edge disciplines and programs. From 2016 to 2020, the University accepted 720 short-term exchange students and 189 dual-degree students from German universities. There are 77 students went to Germany to obtain joint doctoral training, 44 to pursue doctoral degrees and 88 to enroll in joint master’s degree programs. The University also carried out 16 projects for postgraduate academic exchange at partner universities in Germany. In the fields of new energy vehicles, intelligent manufacturing, intelligent transportation, architecture and urban planning, medicine and life sciences, the University has set up 47 international scientific and technological, cooperation-based projects, established four MOE joint international research
The system of endowed chairs offers students an international environment for learning. Deepening cooperation between education and industry is comprehensively pursued. Tongji University is an internationally renowned comprehensive, research-oriented university with study programs in science, engineering, medicine, law, economics, and management. The University began in 1907 when German, French, and Russian schools were founded by the Emperor of Germany. Tongji University has been approved as a research institution with distinctive achievements.

I. Background

University has established 47 international scientific and technological cooperation projects. The University also carried out 16 projects for postgraduate academic exchange cooperation with Germany. Meanwhile, the University accepted 720 short-term exchange students and 189 dual-degree students from Germany, involving 14 colleges or schools and covering a wide range of disciplines.

Subsequently, the University established a Research Center with leading German enterprises, such as Volkswagen, Siemens, and Bayer. On his official visit in 2016, German President Joachim Gauck described Tongji University as “the academic exchange hub between China and Germany.” As a model of Sino-German higher education cooperation, the University has been mentioned in many important policy papers in China and Germany, such as the “Sino-German Joint Action Plan: Shaping Innovation Together” and the “China Strategy 2015-2020”.

The University has launched the construction of Sino-German Doctoral School (in German: Chinesisch-Deutsches Doktorandenkolleg, CDDK) since 2021 so as to further deepen its cooperation with Germany and Europe, strengthen educational, cultural, scientific and technological exchange between China and Germany and other European partners, advance the international, high-level, talent-training system, and promote high-quality, cutting-edge research and in-depth research cooperation between the industrial and higher education sector.

II. Scholarship programs for doctoral students

There are several channels and opportunities available for the European students who are accepted by CDDK.

★ Note: Scholarship is tax free.

1) Tongji University & Bank of China Global Talent Scholarship
2) International Doctoral Scholarship Program of Tongji University
3) Chinese Government Scholarship - Doctoral Student Program
4) Foreign Student Scholarship Program of the Shanghai Municipal Government
5) Research Project Funding directly from the Doctoral Supervisor
6) CSC (Chinese Scholarship Council) Scholarship
7) Other Scholarship organizations, e.g., DAAD, Erasmus...
For those candidates who success from overall evaluation (incl. materials, interview) for scholarship, s/he will receive scholarship with global competitiveness. The doctoral positions provided regarding financial support are comparable to the level of TV-L E13 full (100%) position as in Germany or Europe. Some excellent ones will even get higher grade of scholarship. Usually, the scholarship will last four years and under annual evaluation. Importantly, the applicants first of all choose his interested research direction and contact the potential supervisor (professors are listed in this brochure).

III. Application requirements

To be eligible for admission to doctoral study, the applicant should have completed a subject-relevant Master degree study program, be able to complete doctoral-level learning tasks, and have the potential to engage in scientific research, teaching or management practice in the future. The applicant should also meet the following general requirements besides of the requirements from supervisors:

1. The applicant must hold a non-Chinese passport valid for at least four years and have resided outside China for more than two years.
2. The applicant must hold a master’s degree (or equivalent level of degree) awarded by an authoritative body or relevant certification of equivalent academic qualifications.
3. The applicant should have a strong background in postgraduate study and good academic performance in relevant academic fields.

4. The applicant should be proficient in English or German. For more details on language requirements, please refer to the admission office for oversea students of Tongji University.

IV. Application deadline

In accordance with the regulations of Tongji University. Please contact your potential supervisor as soon as possible to get enough time for your application.

V. Application documents

1. Degree certificate

The applicant should hold a foreign degree equivalent to the Chinese master’s degree, which should be awarded by an internationally recognized academic institution. Degree equivalency is determined by the assessor of the Graduate Admissions Office and the admission office for oversea students of Tongji University.

2. Transcript

The applicant should submit a transcript of his/her final stage of study. If the transcript does not confirm the conferral of the degree, the applicant should submit supplementary certification. The applicant should provide the original transcript together with a translated English transcript. In most cases, transcript in English translation are issued by the applicant’s university or government agency. If the issuing agency uses English, an English translation of the transcript is not required. The original transcript should be provided by the original university and be accompanied by the university seal or imprint and the signature of the authorized institution. For more information, please contact the head of the department or the Graduate Admissions Office. the Graduate Admissions Office and the admission office for oversea students of Tongji University.

3. Letter of motivation

The letter of motivation is an opportunity for the applicant to present his/her scientific interests and research objectives and to state the reasons why he/she is seeking admission to the Sino-German Doctoral School (CDDK) of Tongji University rather than other institutions. At the same time, the applicant should provide some background information, including research experience, areas of expertise, distinctions received and extracurricular activities attended.

4. Letter of recommendation

-14-

-15-
The applicant is required to submit at least two letters of recommendation written by a professor (or instructor of equivalent qualification) and his/her master's supervisor. In the letter, the respective instructor should provide his/her personal evaluation of the applicant, including an assessment of the applicant's level of professional knowledge, research competence, working attitude, personality characteristics and the potential to win a scholarship.

VI. Admissions related websites

Graduate admissions:  
https://yz.tongji.edu.cn/zsxw/bszs.htm

International Students Office:  
https://study.tongji.edu.cn/English/HOME.htm

Sino-German School (CDHK):  
https://cdhk.tongji.edu.cn/cdhkDE/main.htm

(very soon, CDDK’s particular web link will be available with a fast link from CDHK’s website)
The CDHK has signed or extended endowed chair agreements for autonomous driving, intellectual property, and new energy vehicles with companies such as Porsche, Bayer, and Infineon. The key research areas of the endowed chairs include innovation, technology transfer, and practical applications. The CDHK has been instrumental in deepening cooperation between education and industry, especially with well-known transnational companies such as Porsche, Bayer, Schaeffler, and Infineon.

25 years ago, the CDHK had cultivated nearly 2000 outstanding graduates with international perspectives and a high sense of social responsibility. Since its establishment, the CDHK has been praised by the Federal Foreign Office for its excellence in promoting Sino-German cooperation in the field of education, research, and business. It has been recognized as a “second exemplary Sino-Foreign Cooperative Education Institution”.

In 2022, Tongji University integrated its internal resources related to Germany and established the first Sino-German doctoral school in China and the Sino-German Joint Research Center (Tongji University), which was approved by the Ministry of Education. It has been awarded the title of "Innovations Award of Tongji University" and "Outstanding Contributions to Sino-German Cooperation in Higher Education".

The CDHK introduces world-class educational resources, carries out the discipline construction, curriculum system construction, engineering practice teaching, and curriculum reform. The CDHK has a high proportion of international students every year, making it one of the Tongji colleges with the highest proportion of international students. Several partner universities of the CDHK belong to the German Excellence Initiative or the Excellence Initiative 2008, which offers high-level internatonal courses.

In 2021, the DAAD praised Tongji University’s various cooperation and exchange platforms, which is the lighthouse project of German foreign science and technology policy. The CDHK has been frequently visited by ministerial-level leaders, such as Foreign Minister Heiko Maas, State Councilor and Foreign Minister Wang Yi, and Academician Wan Gang of the CPPCC. It has been highly appreciated by Chinese and German leaders and experts for its success in training high-level talents with an international outlook. The four Centers will continue to cooperate with each other and further expand the cooperation of various disciplines with Germany, and open up a new space for the development of Sino-German cooperation in higher education.

The CDHK and the College of Mechanical Engineering, College of Automotive and Management of Tongji University jointly established four Sino-German joint research institutions, namely the Sino-German Mechanical Engineering Center, the Sino-German Automotive Joint R&D Center, the Sino-German Intelligent Science and Technology Research Center, and the Sino-German Academy for Economics & Management, to jointly cultivate high-level talents with an international outlook. The four Centers will cooperate with each other and further expand their cooperation with Germany.

### Research Areas

- **Automotive Joint R&D Center**: Focuses on autonomous driving, intellectual property, and new energy vehicles.
- **Sino-German Intelligent Science and Technology Research Center**: Engages in research on intelligent technology and green development.
- **Sino-German Academy for Economics & Management**: Specializes in business management and strategy.
- **Sino-German Mechanical Engineering Center**: Concentrates on mechanical engineering and technology transfer.
- **Sino-German Joint Research Center (Tongji University)**: Home to the first Sino-German doctoral school and the Sino-German Joint Research Center.

The CDHK is a key platform for promoting Sino-German cooperation in education, research, and business, and is committed to training high-level talents with international perspectives and a high sense of social responsibility and innovation.
SU Taoyong
Email  
sutaoyong@tongji.edu.cn
Research Fields  
Corporate Strategy, Innovation, and Entrepreneurship
Personal Website  
https://sem.tongji.edu.cn/semen/12026.html
Doctoral thesis topic  
1. Environmental regulations and corporate ESG  
2. ESG disclosure/performance and green finance  
3. Performance feedback and digital transformation  
4. Digital transformation and knowledge sharing  
5. Digital capability and green transformation  
6. Digital technological innovation and the firm's high-quality growth
Requirements  
1. Applicants should be interested in scientific research. 
2. Applicants should master the basic knowledge of management science. 
3. Applicants should master some statistical knowledge and software (i.e. STATA/R). 
4. Applicants should master some research methods. 
5. Applicants should be able to work in a team. 
6. Applicants should have experience in scientific research.

ZHONG Ninghua
Email  
zhongninghua@tongji.edu.cn
Research Fields  
Macro Economy, Corporate Finance, Asset Pricing
Professional Activities  
Consultant of World Bank and Asian Development Bank
Personal Website  
https://sem.tongji.edu.cn/semen/12410.html
Doctoral thesis topic  
2. Government Credit and Municipal Bond Pricing  
3. Infrastructure Construction Financing and Cost-benefit Estimation  
4. State-owned Banks and State-owned Enterprises: A Comparative Study between China and Germany
Requirements  
1. A background in economics, finance, or mathematics  
2. Strong work ethic and organizational skills  
3. Familiarity with various statistical analyses  
4. Knowledge of one or more of Stata, R, or Python  
5. Proficiency in reading, writing, and listening in academic English.

WANG Hongwei
Email  
hwwang@tongji.edu.cn
Research Fields  
Business intelligence, social network service, and their interdisciplinary areas
Professional Activities  
Executive Director of China Association for Information Systems
Personal Website  
https://sem.tongji.edu.cn/semch/15127.html
Doctoral thesis topic  
1. Social media analytics  
2. Crowd-funding and P2P lending  
3. Text Analytics and Sentiment analysis
Requirements  
1. Strong motivation to do research. 
2. Strong background in mathematics and programming. 
3. A good GPA from a reputable university. 
4. A reasonable TOEFL (80+) or IELTS score (6.5+). CET-6 is acceptable for top candidates. 
5. A good knowledge of at least one main computer language such as python and Java.
GUO Lulu
Email
guoLL21@tongji.edu.cn
Research Fields
Connected and automated vehicles, optimization control, energy management, vehicle cybersecurity
Personal Website
https://scholar.google.com.tw/citations?hl=zh-CN&user=0sUbiwQAAAAJ
Doctoral thesis topic
1. Real-time solution of complicated and nonlinear optimal control problems
2. Multi-vehicle cooperative optimization at intersections for improved traffics
3. Knowledge-learning enhanced control for decision-making of automated vehicles
Requirements
1. Perspective students should have a bachelor's or master's degree in electrical engineering or related fields;
2. Perspective students should have strong programming (e.g., C/C++, python, MATLAB/Simulink) and mathematical (e.g., optimization, machine learning, and control theory) skills with experience in developing research projects.

LI Li
Email
lili@tongji.edu.cn
Research Fields
Industrial Intelligent Decision and Optimization
Professional Activities
Professor
Personal Website
https://cse.tongji.edu.cn/6b/8a/c15580a158602/page.htm
Doctoral thesis topic
1. Automatic Virtual Measurement
2. Data-driven Scheduling of Large-scale System
3. Predictive Maintenance/ Predictive Health Management
4. Information Infusion for Complex Scene Understanding
Requirements
1. Master Degree in Control Engineering, Computer Engineering or related major
2. Proficient in using programming languages (such as Python, C#, Java or Matlab)

LIN Lin
Email
fxlinlin@tongji.edu.cn
Research Fields
Molecular, biological, and multi-scale communications
Professional Activities
IEEE MBMC-TC Chair
Personal Website
https://sites.google.com/site/fxlinlin/
Doctoral thesis topic
1. Molecular, biological, and multi-scale communications
Requirements
1. Students are expected to have a bachelor or Master's degree in electrical engineering or a related discipline.
2. The desirable minimum bachelor GPA is 3.5 (of a 5.0 maximum).

SHEN Runjie
Email
shenrunjie@tongji.edu.cn
Research Fields
UAV Control Technology, machine vision
Personal Website
http://www.shuchuangkj.com
Doctoral thesis topic
1. Research on UAV positioning and navigation methods in weak feature environments.
2. UAV indoor and outdoor cross scene sensor switching and seamless navigation method.
Requirements
1. Have completed research on robot or drone projects.
2. Previous research in complete robotics or UAV projects
3. Familiar with the development of embedded systems.
4. Familiar with visual slam and laser slam research.
5. Familiar with deep reinforcement learning, neural networks, perceptual fusion algorithms, location planning algorithms, control algorithms, etc.
XU Zhiyu
Email
xuzhiyu@tongji.edu.cn
Research Fields
Smart grid, electricity market
Professional Activities
Professorate Senior Engineer
Personal Website
https://see.tongji.edu.cn/info/1379/10771.htm
Doctoral thesis topic
1. Blockchain enabled peer-to-peer electricity trading in smart grid.
2. Data-driven modeling, analysis and control of smart grid.
Requirements
1. Basic knowledge of smart grid, electricity market, blockchain.
2. Familiar with mathematical modeling and optimization.
3. Familiar with algorithms of optimization and data mining.
4. Familiar with MATLAB programming.

YIN Huilin
Email
yinhuilin@tongji.edu.cn
Research Fields
Environment perception of autonomous systems
Reliability and safety of automated driving
Personal Website
https://ivcm.tongji.edu.cn/
Doctoral thesis topic
1. Safe and robust cognition for autonomous driving
2. Multimodality fusion Deep Neural Network for intelligent vehicles
Requirements
1. Research experience of Deep Learning and Reinforcement Learning
2. Interest in automated Driving

YE Wei
Email
yew@tongji.edu.cn
Research Fields
unsupervised learning, graph machine learning
Personal Website
https://weiye.userweb.mwn.de/
Doctoral thesis topic
Graph neural networks (GNNs) have aroused a great deal of attention recently. The thesis will focus on the key research problem: improving the representational power of GNNs (Graph neural networks) effectively. To this end, we will investigate how to hierarchically embed, propagate, and aggregate the information in the three levels of the graph structures, i.e., node level, cluster level, and graph level, and extend the message passing mechanism in GNNs. The studies in this thesis will dramatically increase the representational power of GNNs, provide theoretical support for the further development of this field, and have important scientific significance. The thesis will focus on the key research problem: improving the representational power of GNNs effectively. To this end, we will investigate how to hierarchically embed, propagate, and aggregate the information in the three levels of the graph structures, i.e., node level, cluster level, and graph level, and extend the message passing mechanism in GNNs. The studies in this thesis will dramatically increase the representational power of GNNs, provide theoretical support for the further development of this field, and have important scientific significance.
Requirements
1. Basic knowledge of machine learning and deep learning
2. Coding experience in Tensorflow/Pytorch
3. Related background in Computer Science, Electrical Engineering, Statistics, and Mathematics
YIN Xuefeng

Email
yinxuefeng@tongji.edu.cn

Research Fields
Wireless communications, radio channel characterization, Radar signal processing, high-resolution parameter estimation, 5G, 6G and 6G communication technologies.

Professional Activities
Professor, Visiting professor in Madrid Polytechnic University

Personal Website
https://comm.tongji.edu.cn/c9/94/c6936a182676/page.htm

Doctoral thesis topic
1. Massive MIMO (Multiple-input multiple-output) channel characterization modelling, including channel measurements, parametric analysis and statistical model establishments.
2. Joint communication and sensing technologies, including the propagation channel analysis, joint comm. and sensing performance analysis, etc.
3. Millimeter wave vehicular radar technologies, such as vehicular channel characterization, millimeter and Terahertz wave propagation, FMCW and MIMO radar design, and high-resolution target detection algorithm design.
4. High-speed vehicle communications, including high-speed train communications, unmanned aerial vehicle (UAV) communications such as UAV to ground, UAV to UAV communications, channel modeling and comm. algorithm design.
5. Reconfigurable intelligent surface technologies, including the RIS equipment development and the channel modeling.
6. Artificial intelligence (AI)-based channel modeling & sensing, including using GAN, CNN, RNN networks to build new-generation channel models.
7. Graph modeling simulation technologies for channel realization.

Requirements
1. Being motivated in research
2. Mathematical background with Matlab programming implementation capability
3. Wireless communication fundamentals

ZHOU Shuwei

Email
shuwei_zhou@tongji.edu.cn

Research Fields
Underground engineering, computational rock mechanics, compressed air energy storage, compressed hydrogen energy storage

Professional Activities
Shanghai Eastern Scholar, Shanghai Leading Talent

Personal Website
https://faculty-civileng.tongji.edu.cn/zhoushuwei/zh_CN/

Doctoral thesis topic
1. Multi-field phase field modeling of fracture initiation and propagation in heterogeneous rock mass of a underground cavern for compressed hydrogen energy storage
2. Smart fracture modeling for lined rock caverns for compressed air energy storage
3. Fracture mechanism of transversely isotropic rock mass of lined rock caverns for compressed air energy storage
4. Sealing performance of lined rock caverns for compressed hydrogen energy storage

Requirements
1. Adequate English fluency in daily communication and scientific writing
2. Background related to rock mechanics or computational mechanics

JIN Zheyan

Email
zheyanjin@tongji.edu.cn

Research Fields
Aircraft icing, Advanced flow diagnostics

Personal Website
https://zyjin.tongji.edu.cn/English/Home.htm

Doctoral thesis topic
1. The impact and freezing processes of a supercooled large droplet on the shear-driven water film. Under certain icing conditions, the supercooled large water droplets that impact on the aircraft surface cannot freeze completely and the unfrozen part may spread into a water film by the boundary layer airflow. When
a supercooled large droplet impact on the water film, the amount of water on the ice surface will be redistributed. As for this thesis, the PhD candidate is expected to study the mechanism within the impact and freezing processes of a supercooled large droplet on the shear-driven water film.

2. The melting process of an ice bead under the thermal effects in AC-DBD plasma actuation: The aircraft icing can change the aerodynamic shape of the aircraft, reduce the lift coefficient, and even lead to aircraft crashes. Traditional anti-icing and de-icing technologies have certain shortcomings, such as high energy consumption, affecting aircraft performance, and incomplete de-icing, etc. Thus, new and efficient anti-icing and de-icing technologies are still desirable for researchers. As for this thesis, the PhD candidate is expected to study the mechanism within the melting process of an ice bead under the thermal effects in AC-DBD plasma actuation.

Requirements
1. Bachelor degree in Engineering
2. Basic knowledge in Fluid Dynamics, Heat Transfer, and Phase Transition

**HE Pengfei**

- **Email**: ph232@tongji.edu.cn
- **Research Fields**: Material and Mechanics
- **Professional Activities**
  - Member of China Aeronautical Society,
  - Member of China Railway Society,
  - Vice Director of Shanghai Materials Association
- **Personal Website**: https://aero-mech.tongji.edu.cn/3a/c9/c22274a211657/page.htm
- **Doctoral thesis topic**: Fatigue, damage, life and reliability of materials and structures
- **Requirements**
  1. Fluent in English
  2. Focus on research and with clear motivation for a doctoral study
  3. Good at communication

**JIN Yabin**

- **Email**: 083623jinyabin@tongji.edu.cn
- **Research Fields**: Acoustic/Mechanical Metamaterials, Noise and Vibration Control, Intelligent Metamaterials
- **Professional Activities**
  - Editorial Board Member of Journal of Physics D: Applied Physics
- **Personal Website**: https://www.researchgate.net/profile/Yabin-j-in
- **Doctoral thesis topic**: Space-time Modulated Metamaterials for Elastic Wave Control
- **Requirements**
  1. Background in Physics, Mechanics, Mechanical Engineering, Mathematics, Artificial Intelligence, et al. are Welcome;
  2. Be optimistic and motivated;
  3. Be interested in theory/simulation, and/or experiment.

**CAO Nan**

- **Email**: nan.cao@tongji.edu.cn
- **Research Fields**: Data Visualization, Visual Communication Design, Intelligent Design, Data Mining, Machine Learning
- **Professional Activities**
  - Associate Editor of IEEE Transactions on Big Data
  - Paper Co-Chair of IEEE PacificVis 2021, 2022
  - Program Committee Member of IEEE VIS, PacificVis, EuroVis
  - AI 2000 Most Influential Scholar (Honorable Mention)
  - IBM Outstanding Technical Achievement Award Winer
  - Microsoft Global Most Valuable Professional (MVP)
ZHANG Xiaoqing

Email
x.zhang@tongji.edu.cn

Research Fields
Flexible piezoelectric materials and transducers

Professional Activities
IEEE senior member

Personal Website
https://electret.tongji.edu.cn

Doctoral thesis topic
1. Design, preparation, and characterization of high performance ferroelectrets
2. Flexible sensors based on ferroelectrets
3. Vibrational energy harvesting

Requirements
1. Major in physics, materials, or electronics

LIU Chun

Email
liuchun@tongji.edu.cn

Research Fields
Visual positioning and SLAM, LiDAR, UAV Observation

Professional Activities
UNESCO Advised professor

Personal Website
https://celiang.tongji.edu.cn/info/1300/2394.htm

Doctoral thesis topic
1. Low altitude visual spectrum coupled ecological perception
2. Research on scene perception of quadruped biomimetic robots
3. Vision and LiDAR assisted intelligent driving

Requirements
1. Background of Remote sensing and information technology
2. Understand intelligent assisted driving and high-precision maps
3. Understand the architecture of intelligent robots

LIN Yi

Email
linyi@tongji.edu.cn

Research Fields
Digital Photogrammetry, Environmental Remote Sensing

Doctoral thesis topic
1. New Approach to The Registration of Multi-source Heterogeneous Remote Sensing Images;
2. Optimal Lightweight Neuronal Networks for Information Extraction in Remote Sensing Image

Requirements
1. With good English reading, speaking, writing skills;
2. With good professional foundation in Remote sensing and GIS; Major courses include Photogrammetry, GIS, Remote Sensing, Digital Image Processing, Machine Learning, Data Analysis, etc.
3. Proficient in some major programming language development, such as C/C++, C#, Python, OpenCV, Matlab, etc. GIS-based programming and algorithm design skills
4. Proficiency in the use of GIS, remote sensing image processing software such as ArcGIS, ENVI, ERDAS, AutoCAD, CorelDRAW, PS, etc.
CAI Liming

- Email: lcai@tongji.edu.cn
- Research Fields: Hydrogen, fuel cell, e-fuel, combustion, reaction kinetics, machine learning method, artificial intelligence
- Professional Activities: Member of German Section of Combustion Institute
- Personal Website: https://auto.tongji.edu.cn/info/1162/7417.htm

Doctoral thesis topic:
1. Numerical and experimental investigation on reaction kinetics of e-fuels
2. Numerical modeling of the fundamental chemical reaction processes in fuel cells
3. Development of advanced machine learning methods and frameworks for reaction kinetic modeling
4. Interdisciplinary research on reaction kinetic models for CFD simulations

Requirements:
1. M.Sc. degree (or equivalent) in Mechanical Engineering, Chemical Engineering, or a related subject with above-average grades
2. Fundamental knowledge of combustion theory
3. Interest in programming and numerical modeling
4. Excellent oral and written English communication skills, German language knowledge is a plus
5. Ability to work independently
6. Willingness to take on responsibility
7. Ability to work in an interdisciplinary team

CHEN Guang

- Email: guangchen@tongji.edu.cn
- Research Fields: Embodied Intelligence, Computer Vision
- Personal Website: https://ispc-group.github.io/

- Doctoral thesis topic: We offer thesis topics related to intelligent perception and computing such as unified perception system for autonomous driving, large scale/general perception model for autonomous driving, content generation and manipulation (3D), data-centric AI, embodied AI, robot learning and reinforcement learning. Topics include but are not limited to:
  1. Large-scale LiDAR Point Cloud Registration for Autonomous Vehicle
  2. Open-Set Domain Adaptation for Autonomous Vehicle
  3. End to End Learning for Unified Autonomous Driving
  4. Certifiable Perception for Autonomous Driving
  5. End to End Learning for Vision-Centric Autonomous Driving
  6. Other topics related to research fields

Requirements:
1. Top-ranking students
2. Published high-quality papers (CVPR/ICCV/ECCV/ICRA/NeurIPS+IEEE Trans)
3. CS/EE Background
4. Highly self-motivated
5. Interested in cutting-edge computer vision, machine learning, robot learning, autonomous driving and artificial intelligence
6. For more information please refer to my person website
LIN Rui
Email
ruilin@tongji.edu.cn
Research Fields
Key technology for green Hydrogen
Key technology for Fuel Cells
Carbon dioxide electro-reduction
Professional Activities
Professor
Personal Website
https://auto.tongji.edu.cn/info/1169/6419.htm
Doctoral thesis topic

1. Three-phase interface and electrode structure evolution process and the relationship between performance and life under multi-physics coupling
2. Online Diagnosis coordinated control method for internal state of fuel cell stack and electrolysis water for green hydrogen production
3. Renewable energy coupled with water electrolysis for green hydrogen production
4. Micro-environment regulation for carbon dioxide electro-reduction
5. Design and large-scale synthesis of novel catalysts for Fuel Cell and electrolyzed water catalysts
6. The model for performance and lifetime evaluation method for fuel cell stack and electrolyzer

Requirements
Good English reading and writing ability

GAO Yuan
Email
yuangao@tongji.edu.cn
Research Fields
Fuel Cell Simulation and testing, Micro-Porous Flow Simulation, Cold-Start Strategy
Personal Website
GAO Yuan- Tongji University – Automotive Academy (tongji.edu.cn)
Doctoral thesis topic
1. Three-dimensional topological optimization of fuel cell electrode models: Analyzing electrical characteristics. •Developing a mathematical model to express the relationship between the electrical properties and electrode structure. •Implementing a method for three-dimensional reconstruction using the Marching Cubes algorithm. •Constructing a three-dimensional topology optimization model employing metaheuristic or neural network techniques.
2. Fuel cell cold start strategies: Optimizing startup time. •Creating a mathematical model for the fuel cell cold start process, considering multiple coupled parameters. •Examining the influence of active heating on solid-liquid phase transitions during cold start. •Introducing an optimization method for cold start strategies based on neural networks, aiming for the shortest startup time.
3. Regional degradation mechanisms of fuel cell catalyst layers under dynamic load testing conditions. •Studying the electrical characteristics of fuel cells under dynamic load conditions using experimental approaches. •Characterizing the structural properties of materials post-degradation. •Establishing the connection between electrochemical properties and the structural features of the catalyst layer.
4. Impact of NEDC cycle and operating parameters on fuel cell durability. Research content: •Analyzing performance degradation of fuel cells under NEDC cycle conditions. •Proposing an empirical formula for quantitatively calculating polarization loss based on experimental findings.

Requirements
1. knowledge of fluid dynamics or relevant experience in numerical simulation methods (Topic 1, Topic 2).
2. Academic background in electrochemistry and materials science (for topics 3 and 4).
**Research Areas 3—Intelligent Car and Transportation**

- **Ma Jun**
  - Email: majun.tongji@foxmail.com
  - Research Fields: Future Intelligent vehicle: Intelligent Cockpit, Human-Machine Interaction, Experience Innovation, AIGC for Vehicle, Multi-Modal Knowledge Fusion and Applications in Intelligent Cockpit
  - Personal Website: https://auto.tongji.edu.cn/info/1170/6421.htm
  - Doctoral thesis topic: Cognitive load and usability in human-machine cooperative driving

- **He Yinzhi**
  - Email: heyinzhi@tongji.edu.cn
  - Research Fields: Automobile aerodynamic noise, Vehicle NVH
  - Professional Activities: Expert of China- SAE NVH
  - Doctoral thesis topic: Characteristics of Non-Stationary Wind Noise Sources and Their Transmission Study

- **Pang Jiabin**
  - Email: pang@tongji.edu.cn
  - Research Fields: Vehicle Aerodynamics, Wind Tunnel Technology
  - Professional Activities: member of CARS / CASE
  - Doctoral thesis topic: On-road wind characteristics and simulation techniques

- **Song Ke**
  - Email: ke_song@tongji.edu.cn
  - Research Fields: electric propulsion system for transportation, electrolyzer and fuel cell, engineering application of AI technology
  - Professional Activities: IEEE Senior member
  - Personal Website: https://auto.tongji.edu.cn/info/1175/6552.htm
  - Doctoral thesis topic: Design and validation of advanced fuel cells based on artificial intelligence technology.
2. Innovative applications of hydrogen fuel cells: automobiles, ships, aircraft. The electrification of transportation field is the historical development trend. Hydrogen fuel cell technology has received more and more attention because of its high energy density, fast fuel filling speed and excellent low temperature characteristics. This topic focuses on the innovative applications and challenges of hydrogen fuel cells in automobiles, ships, aircraft (UAV, large manned aircraft), etc. Such as fuel cell system integration, optimal control, modeling and simulation, and functional safety and big data analysis.

**Requirements**

1. Solid theoretical foundation, with a certain practical ability
2. Have a strong sense of innovation, self-management ability

---

**WEI Xuezhe**

*Email*
weixzh@tongji.edu.cn

*Research Fields*
Electric vehicle engineering, Battery modeling and ESS design

*Professional Activities*
AOM Member

*Personal Website*
https://auto.tongji.edu.cn/info/1177/6441.htm

---

**WU Guangqiang**

*Email*
wuguangqiang@tongji.edu.cn

*Research Fields*
1. Fortschrittliches Getriebe/Antrieb und Steuerung des Automobils
2. Unbemanntes Bodenfahrzeug
3. Analyse und Steuerung der nichtlinearer Dynamik im Automobilbereich

---

**XIONG Lu**

*Email*
xiong_lu@tongji.edu.cn

*Research Fields*
Vehicle dynamics control; state estimation; perception, decision, and planning

*Personal Website*
Professor

*Requirements*
1. Studious and abide by academic norms.
2. Strong interest in autonomous vehicles.
3. Good practical ability and independent thinking ability.
ZHANG Lijun
Email
tjedu_zhanglijun@tongji.edu.cn
Research Fields
Vehicle dynamics, Automotive NVH
Professional Activities
CSAE Fellow
Personal Website
https://auto.tongji.edu.cn/info/1180/6453.htm
Doctoral thesis topic
1. Active noise control of harmonic, random and impulsive noise
2. Coupled dynamics and integrated design of frictional brake integrated with regenerative electric in-wheel motor
3. Standard model for coupling automotive aerodynamics, acoustics, and thermodynamics
Requirements
1. Having the ability of dynamic theoretical analysis, experimental research and simulation calculation
2. Having the ability of control theory, analysis and experience of X-in-loop experiments
3. Graduate degree in vehicle engineering, mechanical engineering, fluid mechanics or control engineering

ZHANG Lijun
Email
tjedu_zhanglijun@tongji.edu.cn
Research Fields
Vehicle dynamics, Automotive NVH
Professional Activities
CSAE Fellow
Personal Website
https://auto.tongji.edu.cn/info/1180/6453.htm
Doctoral thesis topic
1. Active noise control of harmonic, random and impulsive noise
2. Coupled dynamics and integrated design of frictional brake integrated with regenerative electric in-wheel motor
3. Standard model for coupling automotive aerodynamics, acoustics, and thermodynamics
Requirements
1. Having the ability of dynamic theoretical analysis, experimental research and simulation calculation
2. Having the ability of control theory, analysis and experience of X-in-loop experiments
3. Graduate degree in vehicle engineering, mechanical engineering, fluid mechanics or control engineering

HU Jia
Email
Hujia@tongji.edu.cn
Research Fields
Automated vehicles, Connected Vehicles
Professional Activities
He is an Associate Editor of the IEEE Transaction on Intelligent Transportation Systems, IEEE Transaction on Intelligent Vehicle, American Society of Civil Engineers Journal of Transportation Engineering, IEEE Open Journal on Intelligent Transportation Systems, an associate editor for IEEE Intelligent Vehicles Symposium since 2018, associate editor for IEEE Intelligent Transportation Systems Conference since 2019, and an advisory editorial board member for the Transportation Research Part C. Furthermore, he is a member of TRB (a division of the National Academies) Vehicle Highway Automation Committee, Freeway Operation Committee and Simulation subcommittee of Traffic Signal Systems Committee, and a member of CAV Impact Committee and Artificial Intelligence Committee of ASCE Transportation and Development Institute. He is also former Chair of Vehicle Automation and Connectivity Committee of the World Transport Convention and a former member of Advanced Technologies Committee and Sustainable Transportation Committee of ASCE Transportation and Development Institute.
Personal Website
https://www.hujia-tongji.com/
Doctoral thesis topic
Selected candidates will work on the following areas: connected and automated vehicles; cyber-physical transportation systems; transportation systems resilience; cooperative control of distributed multi-agent systems; intelligent transportation systems; dynamic transportation systems modeling and control; network optimization; travel behavior modeling and demand forecasting; artificial intelligence and advanced computing applications in transportation.
Requirements
1. Strong computer programming skills (e.g., C++, Java, Python, provable project-level experiences) are encouraged.
2. Backgrounds in Artificial Intelligence and mathematical modeling (e.g., optimization, control) are preferred.
RESEARCH AREAS 3—INTELLIGENT CAR AND TRANSPORTATION

LI Jian
Email
jianli@tongji.edu.cn
Research Fields
Urban mobility planning, resilient transport
Personal Website
https://tjjt.tongji.edu.cn/info/2017/8169.htm
Doctoral thesis topic
1. UR-BAN-Act: Integrated Urban Climate Action for Low-Carbon & Resilient Cities. The project is funded by Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection of Germany. This is an international cooperation project involving five countries and multiple international partners from China, India, Indonesia, the Philippines, and Thailand focuses on the application of intelligent transportation in low-carbon and resilient cities. The project was officially launch it in March 2023, with a research period of four years (2023/03-2026/12)
Requirements
1. Background in urban planning or transportation engineering is preferred
2. Data analysis and programming abilities is preferred
3. Good English oral communication and writing skills

TU Meiting
Email
meitingtu@tongji.edu.cn
Research Fields
Optimization and management of shared mobility systems
Applications of artificial intelligence algorithms in transportation problems
Modeling and analysis of traffic behavior
Low-carbon transportation and public policy
Professional Activities
Leading talents in Shanghai in 2022
Reviewer of Transportation Research Part A, D, E
Personal Website
https://tjjt.tongji.edu.cn/info/2017/8169.htm
Doctoral thesis topic
Real-time connection and information sharing between cars, people, roads, and the internet can help increase the number of passengers, reduce wasted space and distance, and choose better routes. This can improve how our roads work. Because of the "carbon neutrality" goal, the government should look at how carpooling and ride-sharing can help reduce emissions. This article wants to look at how low-carbon policies and shared travel affect how people travel. Autonomous cars can help make travel more on-demand and low-carbon. By making policies that encourage carpooling and ride-sharing, we can make sure that people have a good experience while also helping the environment. We will look at how shared travel affects our cities and measure how policies can help.
Requirements
1. Good at English
2. Passionate about scientific research

WANG Xuesong
Email
wangxs@tongji.edu.cn
Research Fields
Transportation Safety
Professional Activities
Key Laboratory of Road and Traffic Engineering-China Ministry of Education, Associate Director
Joint International Research Laboratory of Transportation Safety, Executive Director
Transportation Research Record, Handling Editor
Accident Analysis & Prevention, Associate Editor
Personal Website
http://www.tjsafety.cn/MembersInformation.aspx?YNID=487&YNID2=334&ID=495
Doctoral thesis topic
Research Field No.1-Driving behavior study using driving simulators: Based on the 8-DOF high-fidelity Tongji University Driving Simulator, establishes effective driver fatigue detection, distracts driving identification and in-vehicle warning optimization studies. These results reveal the mechanism of high-risk adverse driving behaviors.
Research Field No.2-Decision making and Control of Autonomous Vehicle: Autonomous vehicle test scenario library is based on crash data and naturalistic driving study (NDS) data. Car-following models and lane-changing models are analyzed and calibrated with normal driving periods extracted from NDS data. Responsibility-sensitive safety (RSS) model is calibrating different types of safety-critical scenarios.
Research Field No.3—Highway design safety evaluation using driving simulators: Based on the 8-DOF high-fidelity Tongji University Driving Simulator, explores the influence of complex highway geometrics on driving behavior. Design parameters of combined alignments will be further evaluated and optimized.

Research Field No.4—Information-Based Traffic Safety Management: Based on road traffic crash analysis and active warning system, develops regional traffic safety and typical road facilities safety analysis model. Urban and regional traffic safety management planning is carrying out.

Requirements
(1) Master’s degree in traffic engineering, vehicle engineering, psychology, electronic information engineering, statistics and other related disciplines.
(2) For candidates in Research Field No.1&3, background in traffic engineering or psychology, statistics and other related professional knowledge, knowledge of big data analysis, neural networks, machine learning, etc., proficiency in using statistical analysis software (SPSS, R, Matlab, etc.), python programming software, SQL data are required, one person is to be recruited.
(3) For candidates in Research Field No.2, background in traffic engineering or vehicle engineering, electronic information engineering, computer, automation and other related professional knowledge is required, and experience in autonomous driving function development, function testing, simulation software development is preferred, one person is to be recruited.
(4) For candidates in Research Field No.4, background in traffic engineering or mathematics, computer, software and other related professional knowledge is required, experience in data analysis, mathematical and statistical modeling, programming software development is preferred, one person is to be recruited.
(5) The ability to conduct independent research, good communication and coordination skills to work in a team.
(6) Strong writing and speaking skills in Chinese or English, with articles published in authoritative journals at both domestic and international level.

WU Zhizhou
Email
wuzhizhou@tongji.edu.cn

Research Fields
Optimization and control of Transportation Systems with connected autonomous vehicles; Deep learning; Reinforcement learning.

Professional Activities
AOM Member

Personal Website
https://tjjt.tongji.edu.cn/info/2115/8265.htm

Doctoral thesis topic

The objective of this research is to develop an innovative methodology with the following innovative features: (1) is able to achieve accurate and fast on-line calibration of simulation-based traffic assignment models when it is trained on large amount of labelled data; (2) is capable of incorporating automatic identification vehicle data to further improve the accuracy of the calibration; (3) still performs well when it is trained with the mixed data consisting of a few simulated measurements and the corresponding labels, and a number of observed measurements, so that the computational burden caused by the simulation running can be significantly relieved.

2. Personalized Cooperative Automated Platooning using Safe Reinforcement Learning (PCAP-SARL)

The objective of this research is to develop: (1) a methodology for describing human driving styles in making decisions on platoon formation, platoon maintenance and platoon dissolution as well as in planning the corresponding trajectory; and (2) a methodology for human-machine-collaboration-driven vehicles (HMCVs) decision making and trajectory planning with following features: 1) capable of generating HMCV decisions and trajectories consistent with the driving style of the corresponding human driver; 2) accurate in system dynamics modelling, while the safety of the made decisions and planned trajectories can be theoretically guaranteed.

Requirements
1. Strong background in computer science, mathematics, and/or transportation engineering. Experience in deep learning or reinforcement learning is a plus.
2. Strong computer programming skills, e.g., Python, C++, Java.
3. Ability to work independently and within a team.
XIE Chi

Email  
chi.xie@tongji.edu.cn

Research Fields
Transportation systems engineering

Professional Activities
An associate editor and editorial board member of 5 international prestigious journals,
a recipient of 5 best paper/research awards

Personal Website
http://chixie.academia.edu/

Doctoral thesis topic
1. Analysis and optimization of transportation-electricity megasystems  
2. Operational management of carsharing systems  
3. Deployment of urban charging infrastructure for electric vehicles

Requirements
1. Hold a bachelor's degree in engineering, mathematics, computer science, economics, or operational research;
2. Good at computer programming in C/C++, Java, Python...;
3. Speak and write English fluently.

XU Ruihua

Email  
rhxu@tongji.edu.cn

Research Fields
Optimization and Intelligence of Rail Transit Transportation Organization, Simulation of Rail Transportation Systems

Professional Activities
Member of the Transportation Committee and Member of the Intelligent Railway Committee of the China Railway Society, Director of Shanghai System Simulation Society

Personal Website
http://www.tjjt.tongji.edu.cn/XRHsite/

Doctoral thesis topic
1. Theory and Method for Optimizing Transportation Organization of Regional Multilevel Rail Transit Network  
2. Intelligent Compilation Method for Regional Railway Train Operation Diagram  
3. Intelligent control of passenger flow in comprehensive transportation hubs

Requirements
1. Having professional knowledge related to rail transit transportation
2. Capable of mathematical modeling, algorithm design, and computer development
ZHANG Hongchao

Email
zhanghc@tongji.edu.cn

Research Fields
1. Hybrid Engineering of Solar Energy Road
2. Intelligent Transportation Facilities
3. Recharge Rail for Electrical Vehicles
4. Transport Crash Safety and Crash Dummy

Professional Activities
Visiting Scholar in TU Darmstadt during 2004.10~2005.10
Prof. Dr. Hongchao Zhang conducted the first Solar Road for heavy duty freeway 1.08Km on Dec. 2017, which was reported by DW, New York Times, BBC and other medias. Intelligent transportation facilities such as electric marks on road and recharge rail for electrical vehicles autopilot were researched in recent years as well. Transport crash safety and crash dummy were computer simulated and tested in his test ground constructed in 2019 with 60000KJ crash energy.

Personal Website
zhanghc.tongji.edu.cn

Doctoral thesis topic
1. Renewable Energy Road
2. Transportation Control with Electric Marks
3. Crash Safety of Transportation Facilities

Requirements
1. Road & Transportation Engineering or related
2. Solar Energy Engineering related

ZHU Xinyi

Email
zhuxingyi66@tongji.edu.cn

Research Fields
Mult-scale analysis and numerical simulation of concrete;
Smart pavement, including self-healing, snow-melting, self-diagnosis;
Skid risk assessment of runways

Professional Activities
Currently serving as an advisor to the Airport Operations Working Group of International Civil Aviation Organization(AOWG-FTF), the chairperson of the Asphalt and Other Cement Technical Committee of the Road Division of the World Transport Congress, the Associate Editor of Journal of Materials in Civil Engineering (SCI-Q2) and Cleaner Materials, Early-Career Editorial Board Member of Frontiers of Structural and Civil Engineering, the Young Academic Editor of Journal of Traffic and Transportation Engineering (English Edition), China Journal of Highway and Transport, and Journal of Building Materials. Presided over more than 30 projects, including 5 National Natural Science Foundations of China (NSFC), 1 Special topics of national key R&D program, China-Sweden International Cooperation and Exchange Project and the NSFC Outstanding Youth Foundation. Has published more than 150 academic papers, and was selected as one of the top 2% of the world's top scientists and Elsevier's Chinese Most Cited Researchers. Her research results won the first prize of Shanghai Science and Technology Progress Award, twice the first prize of Science and Technology Progress Award of China Highway Society, the second prize of China Industry-University-Research Cooperation Innovation Achievement Award, and the second prize of Science and Technology Progress Award of Yunnan Highway Society.

Personal Website
https://tjjt.tongji.edu.cn/info/2004/8157.htm

Doctoral thesis topic
1. Mult-scale analysis and numerical simulation of asphalt/cement concrete
2. Self-healing/self-diagnosis technique of asphalt/cement concrete
3. Road surface condition assessment based on AI

Requirements
Has certain mechanical basis, or material research basis, or has interdisciplinary background of chemistry, electronics, communication, sensing etc.
Email 19531@tongji.edu.cn

Research Fields
Solid Mechanics, Computational Mechanics

Personal Website
http://www.yingzhao.tj.cn/col.jsp?id=106

Doctoral thesis topic
1. Electro-chemo-mechanical modeling of Li-ion batteries
2. Phase-field modeling of micro-structural evolution
3. Development of novel Finite Element Methods, e.g., Isogeometric Analysis, Finite Cell Method

Requirements
1. Master Degree in Mechanics, Mechanical Engineering, Civil Engineering or relevant engineering fields
2. Good English skills.

ZHAO Ying
Email 19531@tongji.edu.cn

Research Fields
Solid Mechanics, Computational Mechanics

Personal Website
http://www.yingzhao.tj.cn/col.jsp?id=106

Doctoral thesis topic
1. Electro-chemo-mechanical modeling of Li-ion batteries
2. Phase-field modeling of micro-structural evolution
3. Development of novel Finite Element Methods, e.g., Isogeometric Analysis, Finite Cell Method

Requirements
1. Master Degree in Mechanics, Mechanical Engineering, Civil Engineering or relevant engineering fields
2. Good English skills.

FU Yu
Email fu_yu@tongji.edu.cn

Research Fields
Structural batteries, High performance composites, multifunctional polymers

Personal Website
https://aero-mech.tongji.edu.cn/ff/c4/c22274a262084/page.htm

Doctoral thesis topic
Join our research team focused on structural battery composite materials. The PhD student position will be placed at the School of Aerospace Engineering and Applied Mechanics. As a PhD student, you will collaborate with experts in materials science, physics, chemistry and computational mechanics. Your responsibility will be to make structural battery composites and characterise their multifunctional performance. You will manufacture tailor made carbon fiber cathode and anode for structural battery and characterize their microstructure and resulting electro-chemo-mechanical properties. You will also develop novel methods for solid electrolyte for structural batteries. Your project will be part of the activities on Structural battery composites at Tongji University. Structural batteries are one of the advanced carbon fiber composites. Tongji University has pioneered the research in this area for more than one decade. Currently, the Tongji advanced composites team comprise approximately 20 people and over 100 students. The research is performed in an interdisciplinary team across Tongji. Collaborative research can also be conducted for 1-2 years at Southern university of science and technology in Shenzhen China. The PhD position is for four years

Requirements
We expect you to have a MSc in Materials Science, Physics, Chemistry and Chemical Engineering, Applied Mechanics, Mechanical Engineering or similar. We expect you to have interests in conduct interdisciplinary research in Mechanics, Materials science and Chemistry, Electrochemistry, etc. Communicative skills in English (oral as well as in writing) are vital. Furthermore, it will also be expected that you can take on responsibilities within the project, have the ability to take own initiatives and, when needed, work independently. Networking skills, team work skills and quality assurance are important.
BIAN Yongming

Email
ymbianmail@tongji.edu.cn

Research Fields
- Intelligent construction robot for major projects
- Highly skilled biomimetic construction robot
- Robot collaboration and unmanned construction
- Construction equipment and technology for major projects
- Intelligent design of large engineering equipment

Professional Activities
- Dean, School of Mechanical Engineering
- President, Chinese Mechanical Engineering Society
- Director, National Experimental Teaching Demonstration Center
- Vice Director, National Engineering Technology Research Center for Prefabrication Construction in Civil Engineering
- Director, Major Engineering Construction Technology and Equipment Engineering Research Center of the Ministry of Education
- Editorial Board Member, Journal of Tongji University (Natural Science)

Personal Website
https://mefaculty.tongji.edu.cn/info/1296/3224.htm

Doctoral thesis topic
- Research on Autonomous Operation Control of Mining Robot based on Digital Twin
- Research on Intelligent Environment Sensing Technology of Unmanned Excavator

Requirements
1. Master degree in mechanical engineering, control science, computer technology or electronic information.
2. Ample experience in intelligent robot autonomous control, highly adaptable mechanism structure design, complex dynamic environment perception and recognition.
3. Experience with building and deploying containers, workflow managers, application servers, and data visualization is advantageous.
4. Passion for metabolism, ambition to impact clinical practice, and entrepreneurial spirit.
5. Proactive, solution-oriented attitude and excellent communication skills.

FAN Liuqun

Email
lqfan@tongji.edu.cn

Research Fields
- CNC technology, intelligent machines, digital twins, intelligent manufacturing

Professional Activities
- Member of Chinese Mechanical Engineering Society
- Research on Simulation and Optimization of Intelligent Manufacturing Equipment Based on AML and AAS

Requirements
1. Graduated from Mechanical Engineering or Electrical Engineering
2. Understand Industry 4.0 component technology, familiar with asset management shell AAS, AML technology
3. Understand digital control theory, digital twinning technology, simulation optimization technology, and real-time performance

LIU Guangjun

Email
gjliu@tongji.edu.cn

Research Fields
- Intelligent construction robot; unmanned construction machinery

Professional Activities
- Deputy Director, Engineering Research Center of Construction Technology and Equipment for Key Engineering, Ministry of Education Committee Member, Technical Committee of Shanghai Engineering Research Center of Underwater Salvage

Requirements
- Students with a Master's degree in Mechanical Engineering, Engineering Mechanics, Electrical Engineering, or a related field, are all welcome to apply.
MIN Junying
Email junying.min@tongji.edu.cn
Research Fields
New energy vehicle lightweight technologies; Fuel cell technologies
Professional Activities
Alexander von Humboldt fellow; Member of expert committee of China Auto Lightweight Technology Innovation Strategy Alliance; Guest editor/editorial member of several international journals; Organizing/scientific committee member of many international conferences
Personal Website https://al.tongji.edu.cn
Doctoral thesis topic
1. New forming processes of bipolar plates for full cells
2. Application of AI in characterization and modeling lightweight materials
3. Laser-assisted forming/manufacturing
4. Hybrid components and processes
Requirements
With backgrounds of mechanical engineering, materials engineering, applied mechanics, etc.

LIU Haijiang
Email lhj@tongji.edu.cn
Research Fields
Intelligent manufacturing and precision detection technology for complex equipment
Professional Activities
Director of the Department of Mechanical Engineering at Tongji University; Council Member and Executive Dean of Taicang High-Tech Institute of Tongji University; Senior Member of the Chinese Society of Mechanical Engineering Standing Committee Member of the Fifth Committee of the Group and Intelligent Integration Technology Branch of the Chinese Society of Mechanical Engineering
Personal Website https://mefaculty.tongji.edu.cn/info/1296/3230.htm
Doctoral thesis topic
1. Research on the Relationship between Sound, Light, Heat of Titanium Alloy Laser Welding Pool and Welding Quality
3. Research on Evaluation and Optimization Techniques for Improving the Actual Road Range Achievement Rate of Hybrid Electric Vehicle Models
Requirements
1. Enthusiasm for exploring Intelligent manufacturing and precision detection technology for complex equipment
2. Good at teamwork and leadership skills
3. Strong communication skills
4. Obtaining a Bachelor’s or Master’s degree in Mechanical Engineering or related engineering disciplines with a GPA>3.3/4.0
5. Require English proficiency to achieve or equivalent to IELTS 6.0

LIU Haijiang
Research Fields
Driving behavior study using driving simulators: Based on the 8-DOF high-fidelity Tongji University Driving Simulator, establishes effective driver fatigue detection, distracts driving identification and in-vehicle warning optimization studies. These results reveal the mechanism of high-risk adverse driving behaviors.
Decision making and Control of Autonomous Vehicle: Autonomous vehicle test scenario library is based on crash data and naturalistic driving study (NDS) data. Car-following models and lane-changing models are analyzed and calibrated with normal driving periods extracted from NDS data. Responsibility-sensitive safety (RSS) model is calibrating different types of safety-critical scenarios.
Highway design safety evaluation using driving simulators: Based on the 8-DOF high-fidelity Tongji University Driving Simulator, explores the influence of complex highway geometrics on driving behavior. Design parameters of combined alignments will be further evaluated and optimized.
Information-Based Traffic Safety Management: Based on road traffic crash analysis and active warning system, develops regional traffic safety and typical road facilities safety analysis model. Urban and regional traffic safety management planning is carrying out.
INVESTIGATION OF THE MECHANISMS OF CRACK INITIATION AND PROPAGATION ON DUCTILE INTERFACES USING J- INTEGRAL METHODS

Abstract: Additive manufacture has been widely used to fabricate lightweight structures in aeronautic and automotive sectors. The fracture mechanism of interface is of fundamental importance for optimizing the design and fabrication of additive manufactured structures. To identify the underlying fracture mechanisms of additive manufactured ductile interfaces, it is critical to conduct accurate characterization of the fracture behaviour of the interface. Experiments have shown that relatively large cohesive zones tend to develop on ductile interfaces, leading to the conventional Linear Elastic Fracture Mechanics (LEFM) approaches for the characterization of fracture toughness breaking down, which are based on small-scale yielding ahead of crack tips. Therefore, J -integral methods that are suitable for characterizing the fracture toughness of nonlinear elastic and elasto-plastic interfaces are needed. However, the J -integral models for several key test configurations haven’t been developed, and there are only few studies using J -integral approaches to characterize the fracture toughness of dissimilar interfaces. To solve this problem, this project proposes to establish rotation-angle based J -integral models and methods to characterize the fracture toughness of additive manufactured ductile interfaces under different load modes. The evolution of the size of cohesive zone, the interface separation displacement and the fracture toughness during crack initiation and propagation will be quantified. Cohesive zone models will be established based on the J -integral methods to further identify the failure mechanism of ductile interfaces. The aim of this project is to establish new theories and approaches for fracture analysis and prediction for ductile interfaces.

RESEARCH AREAS 4—SMART MANUFACTURING AND CONSTRUCTION

SUN Fengzhen
Email: fengzhensun@tongji.edu.cn
Research Fields: Lightweight manufacturing, Polymers & Composites, Solid Mechanics
Personal Website: https://mefaculty.tongji.edu.cn/info/1309/3407.htm
Doctoral thesis topic: Investigation of the mechanisms of crack initiation and propagation on ductile interfaces using J -integral methods

TANG Qirong
Email: qirong.tang@tongji.edu.cn
Research Fields: Robotics and Artificial Intelligence, Mechatronics
Professional Activities: Distinguished Professor, IEEE Member, ASME Member, Founding Director of Laboratory of Robotics and Multibody System of Tongji University, Leader Professor of the Association of Intelligent Unmanned Systems, Dean of Sino-German Doctoral School, Vice Dean of Sino-German School of Tongji University, Council Member of Tongji University, Holder of the National Science Fund for Distinguished Young Scholars, Holder of Shanghai Science and Technology Award, Convener of “Swarm Intelligence and Swarm Robots” Committee of China Robotics Academic Annual Meeting, Member of “Robot Intelligence” Academic Committee of Automation Society of China.

Requirements: Candidates should have strong motivation for doctoral study and academic work, and would like to communicate in a big group with about 60 members who have a strong passion and determination.

Requirements: 1. Students should graduate from mechanical engineering, material engineering or solid mechanics. 2. Students who have worked on additive manufacturing, adhesive bonding are most welcome.
TANG Yichao

Email
tangyichao@tongji.edu.cn

Research Fields
Small-scale robotics, Medical robotics

Professional Activities
2021-Now Professor, Mechanical Engineering, Tongji University, China
2020-2021 Postdoctoral Researcher, Max Planck Institute for Intelligent Systems, Germany (Advisor: Prof. Metin Sitti)
2019 Postdoctoral Associate, University of Illinois Urbana-Champaign, USA (Advisor: Prof. Sameh Tawfick)
2018 Ph.D., Mechanical Engineering, Temple University, USA
(Advisor: Prof. Jie Yin, now at North Carolina State University)
2014 M.S., Materials Science, Worcester Polytechnic Institute, Worcester, USA
2012 B.S., Materials Science, University of Science and Technology Beijing, China

Personal Website
http://yichaotang.weebly.com/

Doctoral thesis topic
Bio-Interfacing Machines Lab

Requirements
We are always actively recruiting new Ph.D./Master/Exchange students. The candidates need to have a strong passion and determination in investigating bio-interfacing robotic systems and their targeted biomedical applications. Candidates with past research and publication experiences are preferred. If you are interested, please send your CV, Representative publications, a Personal statement, Transcript to tangyichao@tongji.edu.cn.

XIAO Yao

Email
xiaoy10@tongji.edu.cn

Research Fields
Smart materials and structures, biomedical robots

Professional Activities
Humboldt Research Fellowship, JSPS Research Fellowship

Personal Website
https://al.tongji.edu.cn/info/1141/2402.htm

Doctoral thesis topic
1. Mechanical behavior of nanostructured shape memory alloys
2. 3D printing of smart materials for aerospace, automotive and biomedical applications
3. Machine learning for materials design and intelligent manufacturing

Requirements
We are always ready to meet the most outstanding candidates from all fields and areas of expertise! People with diverse cultural and technical backgrounds are welcome to apply and may contribute to the further diversification of ideas.
LIU Xian

Email
Xian.liu@tongji.edu.cn

Research Fields
Tunneling and subsurface engineering
Computational structural mechanics
Machine learning methods and uncertainty modeling

Professional Activities
Full Professor, Tongji University, China

Personal Website
https://faculty-civileng.tongji.edu.cn/liuxian

Doctoral thesis topic
1. Physics-informed machine learning in tunneling engineering
2. Digital Twins towards smart construction in tunnel engineering
3. Material efficient model-based design of robust and sustainable infrastructure

Requirements
1. Masters qualification & good communication skills in English or Chinese
2. Similar research achievements or interests
RESEARCH AREAS 4—SMART MANUFACTURING AND CONSTRUCTION

XIAO Weifang

Email
weifangxiao@tongji.edu.cn

Research Fields
Sprengwirkungshemmende Konstruktion, Intelligente Konstruktion

Professional Activities
IAPS member

Personal Website

Doctoral thesis topic
1. Multiscale modelling of 3D printed concrete
2. Hybrid structural analysis of tunnel linings

Requirements
Für die Bewerbung ist ein erfolgreicher Abschluss eines Erststudiums (z. B. Diplomprüfung, Master-Abschluss oder ein äquivalenter Abschluss) mit einer Gesamtnote von mindestens 2,5 oder mindestens dem Prädikat „gut“ notwendig.

Herbert Mang

Email
Herbert.Mang@tuwien.ac.at jiaolong.Zhang@tongji.edu.cn

Research Fields
Mechanics of deformable solids, Structural Mechanics, Computational Mechanics, Multi-field analysis, Multiscale analysis

Professional Activities
Former President of the Austrian Academy of Sciences; Foreign Member of CAE (Chinese Academy of Engineering), NAE (National Academy of Engineering of the US), acatech (German National Academy of Sciences and Engineering), Polish Academy of Sciences, Engineering Academy of the Czech Republic, etc.

Personal Website
https://www.imws.tuwien.ac.at/no_cache/en/staff/overview/profile/staffmembers/staff/detail/mang-phd/

Doctoral thesis topic
1. Multiscale modelling of 3D printed concrete
2. Hybrid structural analysis of tunnel linings

Requirements
1. Good command of mechanics, mathematics, and English
2. Communication skills
3. Interested in fundamental research in civil engineering with a focus on the solution of practical problems

1. Urbane Sicherheit gegen Explosionen

Requirements
Für die Bewerbung ist ein erfolgreicher Abschluss eines Erststudiums (z. B. Diplomprüfung, Master-Abschluss oder ein äquivalenter Abschluss) mit einer Gesamtnote von mindestens 2,5 oder mindestens dem Prädikat „gut“ notwendig.

1. Urbane Sicherheit gegen Explosionen

Requirements
Für die Bewerbung ist ein erfolgreicher Abschluss eines Erststudiums (z. B. Diplomprüfung, Master-Abschluss oder ein äquivalenter Abschluss) mit einer Gesamtnote von mindestens 2,5 oder mindestens dem Prädikat „gut“ notwendig.
YUAN Yong

Email
yuany@tongji.edu.cn

Research Fields
Civil Engineering

Professional Activities
Member, EASA/fib/ITA-CET
Editorial member of Engineering Structures, Structural Concrete, Scientific Reports

Personal Website
https://geotec.tongji.edu.cn/yy2/main.htm

Doctoral thesis topic
1. Intelligent Construction: This research focuses on using reinforcement learning to simulate and optimize construction strategies in a collaborative, uncertain environment. Computer vision technology is also utilized to extract construction data for customized simulation. Ultimately, the goal is to create a digital twin of the construction process that integrates these technologies for intelligent strategy optimization.

2. Structural Health Monitoring: This research topic aims to develop advanced techniques and methods for the monitoring of civil engineering structures, such as high-rise buildings and bridges, in order to ensure their safety and reliability. This includes the development of sensor networks, data analysis, wind load inversion, and the integration of artificial intelligence technologies for predictive maintenance and risk management.

Requirements
1. Experience in the areas of structural health monitoring or smart construction, such as sensing and data analysis, computer vision, or machine learning.
2. Proficiency in at least one programming language, such as MATLAB or Python.

YU Haitao

Email
yuhaitao@tongji.edu.cn

Research Fields
Geotechnical earthquake engineering, Seismic design and analysis of underground structures, Rock fracture mechanics and fault movement, Multi-field, multi-phase and multi-scale simulation

Professional Activities
Vice-Animateur of WG9 in ITA; Group Leader of Underground Storage and Utilization Technical Committee in ARMA

Personal Website
https://geotec.tongji.edu.cn/yht/main.htm

Doctoral thesis topic
1. Seismic performance evaluation and resilience design method for underground structures
2. Unified nonlocal mechanical model for rock failure simulation
3. Seismic mitigation method for long tunnels crossing active faults
4. Subsoil-structure interaction of shallow-buried underground structures in liquefiable soils during strong earthquakes
5. On the evolution of crack propagation and induced seismicity mechanism during the process of carbon dioxide geological storage
6. On the stability of lunar lava tubes used for habitat affected by lunar earthquakes

Requirements
1. Have basic knowledge of mathematics and mechanics;
2. Have passion on exploring the unknown and never give up.

YANG Bin

Email
yangbin@tongji.edu.cn

Research Fields
Intelligent construction, Structural health monitoring

Professional Activities
Fellow of Chinese Cartographic Society, Fellow of Shanghai Civil Engineering Society, Fellow of IASS.

Personal Website
https://faculty-civileng.tongji.edu.cn/yangbin/zh_CN/zhym/21134/list/index.htm

Doctoral thesis topic
1. Intelligent Construction: This research focuses on using reinforcement learning to simulate and optimize construction strategies in a collaborative, uncertain environment. Computer vision technology is also utilized to extract construction data for customized simulation. Ultimately, the goal is to create a digital twin of the construction process that integrates these technologies for intelligent strategy optimization.

2. Structural Health Monitoring: This research topic aims to develop advanced techniques and methods for the monitoring of civil engineering structures, such as high-rise buildings and bridges, in order to ensure their safety and reliability. This includes the development of sensor networks, data analysis, wind load inversion, and the integration of artificial intelligence technologies for predictive maintenance and risk management.

Requirements
1. Experience in the areas of structural health monitoring or smart construction, such as sensing and data analysis, computer vision, or machine learning.
2. Proficiency in at least one programming language, such as MATLAB or Python.
1. Underground Structures in Liquefiable Soils
A joint project sponsored from NSFC-DFG focus on the mechanism of seismic behavior of underground structures in liquefiable soils. Both theoretical and experimental aspects of the subject will be developed under the close cooperation between TU Munich and Tongji University.

2. 3D Printable Concrete
A joint project founded by MOST-FWH to develop advance concept of 3D printable concrete for structural usage, as a replacement of traditional technology. The topics will cover from materials to structural engineering, in the way of theoretical models, laboratory tests, and practical application. Extensive exchange between Tongji University and TU Wien is the fundamental requirement for the successful research.

**Doctoral thesis topic**
1. Underground Structures in Liquefiable Soils
2. 3D Printable Concrete

**Requirements**
1. Master in Civil Engineering or Mechanics
2. English

**ZHENG Hu**

**Email** zhenghu@tongji.edu.cn

**Research Fields**
Geohazards Prevention, Sand Liquefaction, Granular Rheology (1g or microgravity environment)

**Professional Activities**
Shanghai Leading Talents, Outstanding Young Scientist Award of ICGdR, Oriental Scholars of Shanghai Universities.

**Personal Website**
https://geotec.tongji.edu.cn/zh/main.html

**Doctoral thesis topic**
1. Geohazards related granular rheology.
2. Granular mechanics in microgravity environments.
3. Mechanism of the saturated sand liquefaction

**Requirements**
1. Knows the conceptions of Geological Engineering, granular rheology. The candidate can have some simulation, image process, and AI skills will be great.
2. Likes the experimental research, knows the electronic control system and how to design experiments for the space station environment. Has physics and mechanics backgrounds been required.
3. Imaging process and simulation skills are required. Knows the granular mechanics.

**WU Zhiqiang**

**Email** wus@tongji.edu.cn

**Research Fields**
Theorie und Methoden der intelligenten Stadtplanung; Forschung zu Strategien der nachhaltigen Stadtentwicklung; Ausbildung in Stadtplanung

**Professional Activities**
Mitglied der Chinesischen Nationalen Akademie für Ingenieurwesen (CAE); Mitglied der Deutschen Nationalen Akademie der Technikwissenschaften (acatech);
Mitglied der Königlich-Schwedischen Akademie der Ingenieurwissenschaften (IVA);
Nationaler Meister für Vermessung und Planung; Direktor, China Intelligent Urban Planning Co-creation Center (CIUC) im Ballungsraum des Yangtze River Deltas; Mitglied des Ausschusses für akademische Abschlüsse des Staatsrats; Vorsitzender des Unterausschusses für professionelle Lehre und Beratung in der Stadt- und Landplanung; Vorsitzender des Aufsichtsgremiums der Chinesischen Gesellschaft für Stadtplanung; Vizepräsident der Chinesischen Gesellschaft für Stadtforstschung; Stellvertretender Vorsitzender des chinesischen Fachausschusses für Grünes Bauen und Energieersparung; Erster Co-Vorsitzender des World Planning Schools Congress (WPSC); Gründer des World Urban Planning Education Network (WUPEN); Berater der Regierung der Stadt Shanghai; Exekutiv-Vizepräsident der Shanghai Overseas Returned Scholars Association; Chefplaner, Shanghai 2010 Welt EXPO Park; Chefplaner, Qingdao 2014 Welt-Gartenbau-Ausstellungspark; Chefplaner, Umschlossener Stadtgestaltungsplan für das Subzentrum von Peking; 2011-2021: Vizepräsident der Tongji-Universität; Direktor der Chinesisch-Deutschen Hochschule (CDH) der Tongji-Universität; Dean des Chinesisch-Deutschen Hochschulkollegs (CDHK) der Tongji-Universität; Dean der Chinesisch-Deutschen Hochschule für Angewandte Wissenschaften (CDHAW) der Tongji-Universität

**Personal Website**
https://sem.tongji.edu.cn/semen/12051.html

**Doctoral thesis topic**
1. Vergleichende Studie über internationale Forschungscooperationen zwischen China und Deutschland und die Gestaltung eines deutsch-chinesischen Forschungskooperationsmechanismus
2. Vergleichende Studie über das Anwendungspotenzial intelligenter Technologien in chinesischen und deutschen Städten
3. Vergleichende Studie zur nachhaltigen Stadtentwicklungspolitik und Gestaltung deutsch-chinesischer Kooperationsmechanismen für nachhaltige Entwicklung
4. Fallstudien und Methoden der nachhaltigen Stadtentwicklung in Deutschland

**Requirements**
1. Interesse an intelligenten Technologien, Stadtforstschung und Forschungsmechanismen
2. Fähigkeit zur gemeinsamen Forschung mit dem Betreuer der Dissertation
3. Fähigkeit, in einem Team zu arbeiten
Degradation Mechanisms of High-speed Railway Transition Zones. The operation practices of high-speed railways around the world indicated that the defects of the track and the subgrade occurred most frequently in transition zones between different track foundation configurations. Even if the track geometry irregularity can be well controlled, the degradation rate of the track and the subgrade in transition zones is obviously higher than that of the normal subgrade or normal bridge zones. A most important physical reason of this phenomenon is the transition radiation of the elastic wave, which is induced by the wheel-rail contact of the high-speed trains, due to the track and subgrade inhomogeneity. In this doctoral study, based on a large number of in-situ tests and laboratory experiments, The mathematical model of the transition radiation energy of the elastic wave in high-speed railway transition zones due to subgrade stiffness and geometry inhomogeneities is expected to be established.

Requirements
1. In major of Civil Engineering, Railway Engineering or Solid Mechanics
2. Good at Mechanics and Mathematics.
Doctoral thesis topic
1. Monitoring anaerobic digestion (AD) using the tool of mVOCs: to realize online monitoring and early warning of anaerobic digestion process for biowaste valorization, microbial Volatile Organic Compounds (mVOCs) are used as a biomarker and indicators. High-resolution mass spectrometry is used to achieve the whole profile of mVOCs. The characteristics of mVOCs are tried to be connected with metagenomics and metatranscriptomics of microbiome under different AD scenarios.
2. Application of functional materials into AD process: This study is try to enhance the performance of anaerobic digestion under high organic loading rate, especially for thermophic AD and high solid-content dry AD process. Functional materials that are tailoredly prepared, will be added to the reactor, and investigated for the changes of microorganisms and the reactor performance.
3. Life cycle assessment (LCA) in waste management: to explore a holistic approach to managing waste considering the entire life cycle from its creation to its disposal, analyzing the environmental impacts of a waste management system in the life cycle, and implementing environmentally-friendly strategies. Anaerobic digestion plants and other waste treatment plants in Shanghai and other cities in China will be assessed for each operational unit. The results can be compared with some plants in European countries.

Requirements
1. Language proficiency: Good in English or Chinese.
2. Academic qualifications: A master’s degree related to Environmental Engineering.
3. Research proposal: Outlining the intended research topic, methodology, and objectives.
4. Recommendation Letter.

XIE Li
Email
sally.xieli@tongji.edu.cn
Research Fields
Bioprocess and bioenergy
Professional Activities
IWA member
Personal Website
https://sese.tongji.edu.cn/szdw/zyjs/js/X/xl.htm

LV Fan
Email
lvfan.rhodea@tongji.edu.cn
Research Fields
Anaerobic Digestion, Biological treatment, Environmental microbiology, Waste Management
Professional Activities
Professor
Personal Website
https://sese.tongji.edu.cn/szdw/zyjs/js/L/lf1.htm
https://www.webofscience.com/wos/author/rid/F-4812-2013
https://scholar.google.com/citations?user=44UHwFQAAAAJ&hl=en

ZHANG Hua
Email
zhanghua_tj@tongji.edu.cn
Research Fields
1) Intelligent identification of solid waste using computer vision and machine/deep learning; 2) Thermochemical treatment of solid waste and secondary pollution (residues, flue gas) control; 3) Valorization of thermoplastics to prepare hierarchical porous carbon
Professional Activities
Associate Editor, Journal of the Air & Waste Management Association
Member of Editorial Board, Environmental Sanitation Engineering (in Chinese)
Member of Scientific Advisory Panel, International Waste Working Group (IWWG)
Personal Website
https://sese.tongji.edu.cn/szdw/zyjs/js/Z/zh1.htm
MAO Shun
Email
shunmao@tongji.edu.cn
Research Fields
Environmental engineering, Environmental analysis and monitoring, Water pollution control
Professional Activities
“Highly Cited Researchers” (Clarivate Analytics); Associate editor of Waste Management; Bulletin Editorial board member of Nano-Micro Letters, Engineering, Chinese Chemical Letters, Environmental Science and Ecotechnology
Personal Website
https://sese.tongji.edu.cn/szdw/zyjs/js/M/ms.htm
Doctoral thesis topic
1. Environmental analysis and monitoring  
2. Advanced oxidation processes 
3. Electrochemical oxidation 
4. Photocatalysis
Requirements
1. Background in environmental engineering, chemistry or materials science. 
2. Good English writing and communication skills.

HE Pinjing
Email
xhpjk@tongji.edu.cn
Research Fields
Microplastics pollution control, Landfill leachate treatment, Odor purification, Life cycle assessment
Professional Activities
Editor-in-Chief, Waste Management (Elsevier) 
Editor-in-Chief, Environmental Sanitation Engineering (Chinese Journal) 
Editor, Sustainable Environment Research (Springer Nature)
Personal Website
https://sese.tongji.edu.cn/szdw/zyjs/js/H/hpj/jyjgzjl.htm
Doctoral thesis topic
1. Intelligent classification and identification of physiochemical characteristics of multi-source solid waste based on hyperspectral imaging 
2. Co-incineration of multi-source solid waste: Blending strategies, influencing factors and pollution control 
3. Autogenic pressure gasification and carbonization of thermoplastic for producing hierarchical porous carbon (HPC) and substitute natural gas (SNG)
Requirements
1. The working language is English, and advanced communication skills in English (oral and written) are expected 
2. The ability for independent, organized work is essential. 
3. The interest in solid waste treatment and resource reuse.

LI Yongmei
Email
liyongmei@tongji.edu.cn
Research Fields
Environmental Engineering: Removal and recovery of nutrients from wastewater; Resource and energy recovery from biosolids; Modelling of wastewater treatment plant; Fate and attenuation of emerging organic contaminants in wastewater treatment processes
Professional Activities
Associate editor, Chemosphere (2019-present); Member of the editorial board, Environmental Technology Reviews, Water; Member of the management committee of the IWA nutrient removal and recovery specialist group (2019-present)
Personal Website
https://sese.tongji.edu.cn/en/fac/fac/pro/L/Yongmei_Li.htm
Doctoral thesis topic
1. Low-carbon wastewater treatment technology 
2. Anaerobic digestion of biosolids 
3. Novel technologies for resource or energy recovery from wastewater
Requirements
1. The students should be enthusiastic in international communication and scientific research. 
2. Students should have academic backgrounds related to environmental engineering such as chemistry and biology.

Doctoral thesis topic
1. Intelligent classification and identification of physiochemical characteristics of multi-source solid waste based on hyperspectral imaging 
2. Co-incineration of multi-source solid waste: Blending strategies, influencing factors and pollution control 
3. Autogenic pressure gasification and carbonization of thermoplastic for producing hierarchical porous carbon (HPC) and substitute natural gas (SNG)
Requirements
1. The working language is English, and advanced communication skills in English (oral and written) are expected 
2. The ability for independent, organized work is essential. 
3. The interest in solid waste treatment and resource reuse.

Doctoral thesis topic
1. Environmental analysis and monitoring  
2. Advanced oxidation processes 
3. Electrochemical oxidation 
4. Photocatalysis
Requirements
1. Background in environmental engineering, chemistry or materials science. 
2. Good English writing and communication skills.

Doctoral thesis topic
1. Intelligent classification and identification of physiochemical characteristics of multi-source solid waste based on hyperspectral imaging 
2. Co-incineration of multi-source solid waste: Blending strategies, influencing factors and pollution control 
3. Autogenic pressure gasification and carbonization of thermoplastic for producing hierarchical porous carbon (HPC) and substitute natural gas (SNG)
Requirements
1. The working language is English, and advanced communication skills in English (oral and written) are expected 
2. The ability for independent, organized work is essential. 
3. The interest in solid waste treatment and resource reuse.

Doctoral thesis topic
1. Intelligent classification and identification of physiochemical characteristics of multi-source solid waste based on hyperspectral imaging 
2. Co-incineration of multi-source solid waste: Blending strategies, influencing factors and pollution control 
3. Autogenic pressure gasification and carbonization of thermoplastic for producing hierarchical porous carbon (HPC) and substitute natural gas (SNG)
Requirements
1. The working language is English, and advanced communication skills in English (oral and written) are expected 
2. The ability for independent, organized work is essential. 
3. The interest in solid waste treatment and resource reuse.
**FAN Jianwei**

**Email**
fanjianwei@tongji.edu.cn

**Research Fields**
Innovation Of Environmental Functional Material, Pollution Control Technology

**Professional Activities**
Shanghai Environmental Engineering Technology Association, Secretary

**Personal Website**
https://sse.tongji.edu.cn/szdw/zjjs/js/F/fjw.htm

**Doctoral thesis topic**
Synthesis and application of electrocatalytic denitrification electrode materials

**Requirements**
Academic background in chemistry, materials or environmental science

---

**WANG Ying**

**Email**
yingwang@tongji.edu.cn

**Research Fields**
1. Environmental analytical chemistry;
2. Interfacial electrochemistry and electroanalysis;
3. Fundamental aspects of water pollution control and resources reuse

**Professional Activities**
- National Natural Science Foundation of China (No. 21305046), PI
- China Postdoctoral Science Foundation (No. 2013M531137), PI
- Key Program of Shanghai Postdoctoral Science Foundation (13R21421400), PI
- Multifunctional Nanomaterials for Biosensing and Imaging, sponsored by Department of Energy’s Pacific Northwest Site Office, 2009-2011, main participant
- The National Institutes of Health Counter ACT program through the National Institute of Neurological Disorders and Stroke (award no. NS058161-01), 2009-2011, main participant

**Personal Website**
https://unep-iesd.tongji.edu.cn/iesden/33/bc/c13747a144316/page.htm

**Doctoral thesis topic**
1. Environmental Chemistry and Biology
2. Environmental pollutant analysis: research and technology development of new pollutant analysis and detection methods, pollution remediation effect analysis and evaluation research
3. Environmental Functional Materials
4. Efficient identification and catalytic transformation of pollutants: electrochemistry and nanocatalytic technology, nanocatalyst preparation and interfacial electrochemistry

**Requirements**
1. Master academic English skills is preferred;
2. Professional knowledge is prerequisite
3. Interested in supervisor’s research area;
4. Have certain academic achievements and research ability, able to carry out academic research;
5. Have a passion for environmental research.

---

**LIAO Zhenliang**

**Email**
04150@tongji.edu.cn

**Research Fields**
Carbon Emission Trading, Environmental Systems Analysis, Smart Water/Environmental Protection

**Professional Activities**
Professor-in-Charge at UNEP-Tongji Institute of Environment for Sustainable Development
Tianchi Distinguished Professor of Xinjiang Uygur Autonomous Region

**Personal Website**
https://sse.tongji.edu.cn/szdw/zjjs/js/L/lzl.htm

**Doctoral thesis topic**
1. Carbon Emission Trading (both abroad and at home)
2. Environmental Systems Analysis (e.g. environmental rehabilitation in a basin)
3. Smart Environmental Protection (with deep learning/reinforcement learning technologies)

**Requirements**
1. Be strongly interested in environmental issues and research works.
2. Self-regulation.
3. With some backgrounds of operation research, AI, or economics.
**CHU Wenhai**

**Email**
1world1water@tongji.edu.cn

**Research Fields**
Risk Identification and Control of Water Quality and Water Environmental Health

**Professional Activities**
IWA Disinfection Specialist Group Secretary General; IWA-China YWP Committee Member; ESWRT Associate Editor; AQUA Associate Editor; Water Editorial Board Member; China Water & Wastewater Youth Editorial Board Deputy Director

**Personal Website**
https://sese.tongji.edu.cn/szdw/zyjs/js/C/cwh/jyjgzjl.htm

**Doctoral thesis topic**
1. Water quality assurance of drinking water quality, risk identification and control of water environment health
2. Identification, generation mechanism and integrated control of emerging pollutants
3. Multi-media traceability, transformation mechanism and collaboration control of multi-source emerging pollutants

**Requirements**
1. Honesty and trustworthiness. Not against the academic ethics.
2. A certain professional foundation and the ability to perform experiments.

**DAI Xiaohu**

**Email**
daixiaohu@tongji.edu.cn

**Research Fields**
Wastewater treatment, Organic waste treatment

**Professional Activities**
IWA Fellow

**Personal Website**
https://sese.tongji.edu.cn/szdw/zjjs/js/D/dxh.htm

**Doctoral thesis topic**
1. Sewage sludge treatment and resource recovery
2. Organic solid waste treatment and resource recovery

**Requirements**
1. Have good English or Chinese language skills
2. Have a degree or education of Environmental Engineering

**LOU Yongqi**

**Email**
louyongqi@tongji.edu.cn

**Research Fields**
Design driven Innovation, Design for Social Innovation and Sustainability

**Professional Activities**
Fellow, Royal Swedish Academy of Engineering Sciences

**Personal Website**
https://tjdi.tongji.edu.cn/TeacherDetail.do?id=1112&lang=en

**Doctoral thesis topic**
1. Data-driven Design Approaches on Sustainable Community Building
2. Product Service Design for Wearable and Automotive Systems for Sustainability

**Requirements**
1. Proficient in English speaking and writing
2. Basic knowledge and skills on design, architecture, data science and technology

**Francesca Valsecch**

**Email**
francesca@tongji.edu.cn

**Research Fields**
Design and Ecology

**Professional Activities**
AOM Member

**Personal Website**
https://shanghai-visual.org
https://tjdi.tongji.edu.cn/TeacherDetail.do?id=3700&lang=en

**Doctoral thesis topic**
1. design and ecology 2. design and nature
3. digital social innovation 4. design and cultures

**Requirements**
1. Solid background in Media & Communication Design
2. Highly self-motivated
3. Inserted in Chinese Culture
**DONG Nannan**

**Email**
dongnannan@tongji.edu.cn

**Research Fields**
Urban and Rural Ecological Landscape Restoration based on Digital Technology

**Professional Activities**
1. Vice Director of Department of Landscape Studies, College of Architecture and Urban Planning, Tongji University
2. Vice Director of Future Architecture and Urban Research Institute, TJAD

**Personal Website**

**Doctoral thesis topic**
1. Selection mechanism of landscape plants in response to climate change: A case study of Shanghai, Supported by the National Natural Science Foundation of China (Grant No.31470701), 2015.1—2018.12.
2. Study on the selection mechanism of landscape tree species in arid habitat of urban greenbelt, Supported by the National Natural Science Foundation of China (Grant No.31770747), 2018.01—2021.12.
3. Selection mechanism of wind-resistant garden tree species in coastal areas of East China: A case study of Shanghai, Supported by the National Natural Science Foundation of China (Grant No.32071824), 2021.1—2024.12.

**Requirements**
1. International vision and team spirit
2. Interested in landscape architecture, ecology or botany

**YUAN Feng**

**Email**
philipyuan007@tongji.edu.cn

**Research Fields**
Risk Identification and Control of Water Quality and Water Environmental Health

**Professional Activities**
Editor-in-Chief of Architectural Intelligence journal; Digital FUTURES Founder; Fellowship of America Institute of Architect; Council Member of UIA-PPC IASS Committee; Member; President of International Conference of Computational Design and Robotic Fabrication; Thomas Jefferson Professor at University of Virginia (2019); Visiting Professor at Massachusetts Institute of Technology (2019), Royal Melbourne Institute of Technology (2021)

**Personal Website**
https://caup.tongji.edu.cn/caupen/c1/a3/c11079a115107/page.htm

**Doctoral thesis topic**
1. Digital architecture theory
2. Artificial intelligence augmented design
3. Architectural robotic fabrication
4. Performance-based tectonic

**Requirements**
1. All teaching and written submissions will be in English.
2. Applicants should hold a non-Chinese passport, have a master’s degree or equivalent from an accredited institution, and have published at least two academic papers.
3. Prospective PhD students are required to have a proper research attitude, academic spirit and certain academic accumulation, and to be able to work full-time after admission.
**GAN Jing**

- **Email**: jinggan@tongji.edu.cn
- **Research Fields**
  - Urban Ecological Planning
  - Urban Biodiversity and Built Environment
  - Biophilic City, Spatial Planning for Climate Mitigation and Adaptation
- **Professional Activities**
  - Member of China Green Building Council
  - Member of Eco-city research Council, Chinese Society for Urban Studies
  - Member of Society for Urban Ecology (SURE)
  - Member of Ecological Society of Shanghai

**Personal Website**

https://caup.tongji.edu.cn/caupen/c2/5a/c11080a115290/page.psp

**Doctoral thesis topic**

1. Planning and Design for Urban Biodiversity
2. Spatial Planning for Low-Carbon & Resilient Cities
3. Spatial Planning for Land-Sea-Integrated ecosystem services

**Requirements**

1. Master degree in urban planning, landscape architecture, urban ecology, environmental science, geography or a closely-related field
2. Basic knowledge of urban ecology
3. Previously engaged in research in the field of urban ecological planning

**CHEN Suwen**

- **Email**: swchen@tongji.edu.cn
- **Research Fields**
  - Blast resistance of engineering structures and facilities, such as glass façade, power transformer, steel building structure, bridge, ...  
  - Multi-hazard mitigation for steel structure.
- **Professional Activities**
  - Member of IAPS

**Personal Website**

https://faculty-civileng.tongji.edu.cn/chensuwen/zh_CN/index.htm

**Doctoral thesis topic**

1. Long term behavior of insulating-laminated glass unit
2. Innovative glass structure
3. Intelligent façade design

**Requirements**

1. Strong academic background
2. Intellectual curiosity and open-minded
3. Perseverance: be willing to work hard and persist in the face of challenges and setbacks
4. Strong critical thinking ability
5. Teamwork and communication skills

**ZHAO Zengfeng**

- **Email**: zengfengzhao@tongji.edu.cn
- **Research Fields**
  - Recycled aggregate concrete, CO2 utilisation in the construction materials, sustainable cementitious materials
- **Professional Activities**
  - Member of FIB (International Federation for Structural Concrete), TG4.7 - Structural Applications of Recycled Aggregate Concrete - Properties, Modeling, and Design, TG4.8 - Low-carbon concrete structures, YMG - Young Members Group;

**Personal Website**

https://faculty-civileng.tongji.edu.cn/zhaozengfeng/zh_CN/index/33617/list/index.htm

**Doctoral thesis topic**

1. Use of carbonated recycled sand and recycled powder in the production of green concrete

**Requirements**

1. Interests in the sustainable concrete technology and waste recycling
2. Having a basic knowledge of cement and concrete technology
3. Good at English writing and communication
**YUAN Yong**

**Email**
daichameng@tongji.edu.cn

**Research Fields**
Civil Engineering

**Professional Activities**
Member, EASA/fib/ITA-CET
Editorial member of Engineering Structures, Structural Concrete, Scientific Reports

**Personal Website**
https://hydraulic.tongji.edu.cn/info/1021/1535.htm

**Doctoral thesis topic**
1. Underground Structures in Liquefiable Soils: A joint project sponsored from NSFC-DFG focus on the mechanism of seismic behavior of underground structures in liquefiable soils. Both theoretical and experimental aspects of the subject will be developed under the close cooperation between TU Munich and Tongji University.
2. 3D Printable Concrete: A joint project founded by MOST-FWH to develop advance concept of 3D printable concrete for structural usage, as a replacement of traditional technology. The topics will cover from materials to structural engineering, in the way of theoretical models, laboratory tests, and practical application. Extensive exchange between Tongji University and TU Wien is the fundamental requirement for the successful research.

**Requirements**
1. Master in Civil Engineering or Mechanics
2. English

---

**DAI Chaomeng**

**Email**
daichameng@tongji.edu.cn

**Research Fields**
Science and theory of water safety

**Personal Website**
https://hydraulic.tongji.edu.cn/info/1021/1535.htm

**Doctoral thesis topic**
1. Research on the transport and remediation technology of groundwater pollutants

**Requirements**
1. The candidates should have the ability of reading, writing, and discussing relevant professional content in English.
2. The candidates should have basic knowledge of hydraulic engineering, environmental engineering and other related disciplines

---

**FENG Dianlei**

**Email**
dianleifeng@tongji.edu.cn

**Research Fields**
Environmental Hydrodynamics; Geological Disaster Modeling; Porous Media; Flow and Transport

**Professional Activities**

**Personal Website**
https://hydrdraulic.tongji.edu.cn/info/1021/1376.htm

**Doctoral thesis topic**
1. Multi-phase flow and microbial environment modeling in porous media
2. Submarine landslide and geological disaster modeling and experimental investigations
3. Real-time prediction of landslide tsunami using data assimilation method
5. GPU accelerated Smoothed Particle Hydrodynamic method for modeling coupled wave flow and contaminant transport process

**Requirements**
1. Programming skills with Matlab or C++
2. Understanding of fluid mechanics and CFD methods
3. Fluent written and spoken English skills

---

**LI Hui**

**Email**
hli@tongji.edu.cn

**Research Fields**
Sustainability and Resilience of Transportation Infrastructure

**Professional Activities**
Associate Editor of IJTST
Editorial Board Member of TSE and TRD
Member of the TRB Committee on ADC10

**Personal Website**
https://cst.tongji.edu.cn/cyfc/xsdtr.htm
https://cst.tongji.edu.cn/English/Home.htm
https://cst.tongji.edu.cn/
Doctoral thesis topic
1. Low-carbon transportation infrastructure and LCA analysis
2. Resilience of transportation infrastructure system
3. Sustainable road infrastructure materials and structure
4. Intelligent road design and detection method

Requirements
1. Applicants should have a Master's degree from a well-known university or be a recent graduate of a well-known university and major in Transportation Engineering, Civil Engineering, Ecological or Environmental Engineering, Chemical and Materials Engineering, Software Engineering, or other related majors. Interdisciplinary applicants are warmly welcomed.
2. Applicants need to be good at English or Chinese. Preference will be given to those who have published SCI academic papers or obtained authorized invention patents.
3. Applicants must be self-motivated, hardworking, and interested in scientific research.