Yang Chen

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Education

Taught Postgraduate Program of the University of Hong Kong, China **Sept. 2024-Jul. 2025 (expected)**

- M.Sc. in Civil Engineering (General Stream), University of Hong Kong

Dual-degree Bachelor Program of Chang'an University, China & University College Dublin, Ireland **Sept. 2020-Jul. 2024**

- B.Eng. in Transportation, Chang'an University
- B.Sc. in Transport, City Planning & Environmental Policy, University College Dublin, Ireland
- GPA: 3.76/4.20 First Class Honours (University College Dublin, 2025 QS World University Ranking: 126)
  3.43/5.00 (Chang'an University, Project 211)

- Core courses: Governing the City (98/100); Rural & Landscape Planning (98); Transport Investigation & Analysis (96); Systems Engineering (95); Environmental Change & Transportation Policy (93); Public Transportation System Design & Planning (92); Operations Research & Transport (88); Transportation Models (88); Advanced Transportation Planning (88)

Publications

Journal

1. Wu F W (Supervisor), Sun W C, **Chen Y**, et al. (2024) A Comparative Study on Pedestrian Perception of Vehicle Movement Information in Virtual Reality and Real-world Environments. Submitted to Journal of Transportation Systems Engineering and Information Technology (EI, IF=2.27). *Under review.*
2. **Chen Y**, Wang C (Supervisor), Fu R (Supervisor), et al. (2024) Experimental Studies of Passenger Motion Sickness for Electric Bus Dynamical Characteristics under Different Operating Conditions. *In preparation.*
3. **Chen Y**, Ye H C, Song B K, et al. (2024) Macro and Micro Comparative Analysis of Two-wheeled and Three-wheeled Non-motorized Vehicles at Urban Signalized Intersections: Dynamics and Interactions. *In preparation.*
4. Huang R (Supervisor), **Chen Y**, Song B K, et al. (2024) Experimental Study on Single-file Passenger Flow Movement Characteristics in High-speed Train Cabin Areas. *In preparation.*

Conference

1. **Chen Y**, Sun W C, & Wu F W (Supervisor). (2024) Pedestrian Perception of Vehicle Movement Information in Virtual Reality: A Subjective and Objective Analysis. Submitted to 2025 TRB Annual Meeting. *Under review.*
2. **Chen Y***. (2023) Research on Short-term Passenger Flow Prediction Method of Urban Railway Based on Machine Learning. 5th International Conference on Computing and Data Science (CONF-CDS 2023). *Accepted.*
3. **Chen Y**, Luo Y W, & Zhang H W (2023). Modification and Application of ALPI Model Based on Image Gray Value Analysis and K-Means. 2023 IEEE International Conference on Image Processing and Computer Applications (ICIPCA) (pp. 508-512). IEEE. https://doi.org/10.1109/ICIPCA59209.2023.10257787.
4. Li E K, Ding D (Supervisor), Song B K, **Chen Y**, et al. (2024) Bayesian Loss-Based Crowdedness Estimation in Subway Stations. 2024 World Transport Convention (WTC). *Accepted.*

Thesis

Chen Y, 2024, Characterization of Non-motorized Vehicles Crossing Traffic Flows at Urban Intersections, Undergraduate Thesis, Chang'an University. Supervisor: Assoc. Prof. Wang Yongjie.

Patent & Software Copyright

1. **Chen Y**, Wang C (Supervisor), Luo Y W, et al. National Invention Patent "A Method and System for Identifying Misoperation Behavior of Automobile Driver's Pedal". *Under review.*
2. Zhang S (Supervisor), **Chen Y**, Cao Y F, et al. National Invention Patent "Automobile intelligent blind area monitoring and early warning system based on driver attention assessment". *Under review.*
3. Song B K, Li E K, Dai Y X, **Chen Y**, et al. National Invention Patent "A frozen soil retaining wall and construction method". *Under review.*
4. Ma L (Supervisor), Luo Y W, & **Chen Y**. National Utility Model Patent "Automobile pedal force detection equipment". *Utility*

Model Patent Grant Number: ZL 202320121810.7.

5. Li E K, Song B K, Peng B Y, Zhang L X, Ye W J, Fan W T, Dai Y X, **Chen Y**, Zhang J P (Supervisor). National Utility Model Patent "A dust-reducing and purifying underground space device". *Utility Model Patent Grant Number: ZL 202322572917.6.*
6. Li E K, Song B K, Peng B Y, Zhang L X, Ye W J, Fan W T, Dai Y X, **Chen Y**, Zhang J P (Supervisor). National Utility Model Patent "An underground space lighting device". *Under review.*
7. Su J J, Xu Y P, **Chen Y**, et al. Software Copyright "A vehicle driver pedal misoperation behavior identification and data processing system V1.0". *Under review.*

Academic Experience

1. Research on Passenger Motion Sickness for Electric Vehicles – *Leading* **Mar. 2024 - Present**

- Supervisors: Prof. Rui Fu, Prof. Chang Wang (School of Automobile, Chang'an University; Key Laboratory of Automobile Transportation Safety Technology, Ministry of Transport).
  - Focused on urban public transport systems, and conducted on-site vehicle experiments in Xi'an, China.
  - Processed and analyzed the data, prepared for writing a journal paper manuscript and stimulating.

2. Vulnerable Traffic Participants-Autonomous Vehicle Interaction in VR Environments – *Leading* **Nov. 2023 - Present**

- Supervisor: Assoc. Prof./Sr. Eng. Fuwei Wu (School of Automobile, Chang'an University; Key Laboratory of Automobile Transportation Safety Technology, Ministry of Transport).
  - Used a pedestrian VR simulator to evaluate the reliability of data sources in VR environments.
  - Conducted on several factors affecting vulnerable traffic participants during the interactions with AVs.

3. Driver Fatigue Detection and Warning System Based on Multidimensional Information Fusion in L2-level Human-Machine Co-driving Mode – *Led* **Jan. 2024 - May 2024**

- Supervisors: Prof. Chang Wang, Prof. Rui Fu (School of Automobile, Chang'an University; Key Laboratory of Automobile Transportation Safety Technology, Ministry of Transport).
  - Used a SIMLAB 3-DoF driving simulator to collect driver fatigue state data such as facial characteristics (blinking eyes, yawning mouth), head posture, body sitting position, and ECG signals in L2-level automated driving mode.
  - Organized and conducted experiments, and assisted in MLP-driver fatigue monitoring model building and training.

4. Behavior Identification Technology of Electric Vehicle Driver's Pedal Misoperation (Provincial College Student Innovation and Entrepreneurship Training Program) – *Led* **Jun. 2022 - May 2023**

- Supervisor: Prof. Chang Wang (School of Automobile, Chang'an University; Key Laboratory of Automobile Transportation Safety Technology, Ministry of Transport); Research group: 5 members.
  - Used multi-source sensors placed inside and outside the vehicle to collect the actual driving data.
  - Used the facial angle calculation method based on the feature point coordinates obtained by MediaPipe to obtain real-time facial angles, and trained a neural network model to obtain the current driver's gaze area.

5. Intelligent Blind Zone Monitoring and Early Warning System for Vehicles (National College Student Innovation and Entrepreneurship Training Program) – *Participated* **May 2022 - Jun. 2023**

- Supervisor: Assoc. Prof. Shuo Zhang (School of Automobile, Chang'an University); Research group: 5 members.
  - Collected driver's sight data using eye trackers and segmented driver's field of view and blind spot.
  - Carried out simulation experiments based on the high-fidelity driving simulator in the lab and analyzed driver's vision under different working conditions. Proposed various qualified driver's vision characteristics.

Internships

Suzhou Jieshi Automobile Technology Co., Ltd. **Jul. - Aug. 2022**

- Analyzed the driving behavior of drivers in intelligent vehicles based on historical data.
- Learned basic skills of data processing.

Competitions

National Level

- National 2nd Prize, 19th National College Students Transportation Technology Competition (5/5) May. 2024
- National 2nd Prize, 18th National College Students Transportation Technology Competition (1/5) May. 2023

- Finalist Award, 2023 American Mathematical Contest in Modeling (MCM/ICM) May. 2023
- International Bronze Award, 8th China International "Internet+" College Students Innovation and Entrepreneurship Competition in 2022 (2/4) Feb. 2023
- International Bronze Award, 9th China International "Internet+" College Students Innovation and Entrepreneurship Competition in 2023 (1/3) Apr. 2024
- Outstanding Award, 2023 "Huashu Cup" International Mathematical Contest in Modeling Feb. 2023

Provincial Level

- Provincial Outstanding Award, 18th "Challenge Cup" National College Students Extracurricular Academic Science and Technology Works Competition (3/9) Sep. 2023
- Provincial 1st Prize, "Higher Education Society Cup" National Undergraduate Mathematical Contest in Modeling Nov. 2022
- Provincial 1st Prize, 19th National College Students Transportation Technology Competition Shaanxi Division (5/5) Apr. 2024
- Provincial 2nd Prize, 19th National College Students Transportation Technology Competition Shaanxi Division (5/5) Apr. 2024
- Provincial 2nd Prize, 9th China International "Internet+" College Students Innovation and Entrepreneurship Competition in 2023 (4/8) Aug. 2023
- Provincial 2nd Prize, 11th "Challenge Cup" Shaanxi Automobile Group College Student Entrepreneurship Plan School-Enterprise Special Competition in 2022 (2/5) Jul. 2022
- Provincial 3rd Prize, 18th National College Students Transportation Technology Competition Shaanxi Division (1/5) Apr. 2023
- Provincial 3rd Prize, 14th "Challenge Cup" Shaanxi Automobile Group College Student Entrepreneurship Plan School-Enterprise Special Competition in 2023 (1/5) Sep. 2023

Scholarships

- **Outstanding Undergraduate Graduate**, Chang'an University Apr. 2024
- **Outstanding Undergraduate Thesis Award** (**rank 1st** among 109 students in the Program), Chang'an University Jun. 2024
- The 1st Class Academic Merit Scholarship 2022-2023 academic year
- University Contribution Scholarship 2022-2023 academic year
- College "Double Innovation Star" Scholarship 2022-2023 academic year
- The 2nd Class Academic Merit Scholarship 2021-2022 academic year
- College Contribution Scholarship 2021-2022 academic year
- College Outstanding member 2021-2022 academic year
- The 1st Class Academic Merit Scholarship 2020-2021 academic year
- Course Excellence Scholarship 2020-2021 academic year
- College Outstanding member 2020-2021 academic year
- Volunteer For Epidemic Prevention and Control Mar. 2023
- Provincial "Outstanding Social Practice Team" Award Oct. 2022
- University "Outstanding Social Practice Individual" Award Oct. 2022

Activities

Summer Social Practice in Anhua County, Yiyang City, Hunan Province, China **Jul. 2022**

- Investigated local transportation departments, Baishaxi Tea Factory, Party History Museum, etc., to find out their status quo and gained video editing capacity, press release writing ability, interviewing ability, etc.

Skills

- Software: SPSS, MATLAB, ArcGIS, LaTeX, Visio, Origin, AutoCAD.
- Computer Skills: Python, familiar with basic machine learning algorithms, and basic skills of data processing.
- Language: English (IELTS: 6.5/6, CET-4: 564, CET-6: 519), Chinese (native speaker).