Zhijie Yi

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Research Interests

- Driver state monitoring and behavior modeling
- Interaction between vulnerable road users and autonomous electric vehicles
- External human-machine interfaces for autonomous vehicles
- Control tower operator interfaces for fleets of autonomous vehicles

Education

Hong Kong University of Science and Technology (Guangzhou) **09/2025 – 2028**
PhD in Intelligent Transportation/Robotics and Autonomous Systems *Guangzhou, China*

Beijing Normal University **09/2022 – 06/2025**
Master of design (GPA: 3.6/4.0) *Beijing, China*

Hengyang Normal University **09/2015 – 06/2019**
Bachelor of arts *Hengyang, China*

Publications

[1] **Zhijie Yi**, Yueteng Yu, Xiang Chang, Xinyu Yang, Mengdi Chu, Junrong Lu, Yiyao Liu, Jingli Qin, Ye Jin, Jialin Song, Guyue Zhou, Jiangtao Gong*. From Driver to Passenger: Understanding Evaluation Gaps in Driving Behaviour Delivery. (CSCW2026 Under Review)

[2] Xiang Chang-, **Zhijie Yi**-, Hongling Sheng, Yichang Liu, and Dengbo He*. 2025. The Formation of Trust in Autonomous Vehicles after Interacting with Robotaxis on Public Roads. (ASPIRE 2025 Accept)

[3] Ye Jin, Ruoxuan Yang, **Zhijie Yi**, Xiaoxi SHEN, Peng Huiling, Xiaoan Liu, Jingli Qin, Li Jiayang, Peizhong Gao, Guyue Zhou, Jiangtao Gong*. SurrealDriver: Designing LLM-powered Generative Driver Agent Framework based on Human Drivers' Driving-thinking Data. (IROS 2024). https://doi.org/10.1109/IROS58592.2024.10802229

[4] Hongfei Wu, RChiju Chao, **Zhijie Yi**, Zhiyong Fu*. Improving Knowledge Asymmetry in Group Discussions with Smart Assistants. (HCII 2024). https://doi.org/10.1007/978-3-031-76806-4$_1$1

[5] Chiju Chao, Yu Chen, Hongfei Wu, Wenxuan Wu, **Zhijie Yi**, Liang Xu, Zhiyong Fu*. An Emotional Design Model for Future Smart Product Based on Grounded Theory. Systems. 2023; 11(7):377. https://doi.org/10.3390/systems11070377

Research Experience

Evaluation of heavy truck driver's driving ability under assisted driving **11/2024 – Now**
The Hong Kong University of Science and Technology ***(As Research Assistant)*** *Supervisor: Prof.Dengbo He*

- Completed a total of more than 180 hours and 13,280 kilometers of real logistics road assisted driving and manual driving alternating experiments.
- Use Smarteye desktop eye tracker, ECG, EDA, and RSP to conduct physiological monitoring on 8 long-distance freight truck drivers. And use NASA and KSS scales to measure driver fatigue.
- Use Python to segment data timestamps, use Neurokit2 package to analyze the data of various physiological indicators, and use SAS to perform statistical modeling on various physiological indicators and fatigue factors.

Multimodal Dataset for Pedestrian-Autonomous Vehicle Interaction **05/2024 – Now**
The Hong Kong University of Science and Technology ***(As Research Assistant)*** *Supervisor: Prof.Dengbo He*

- Conducted experiments involving pedestrian-autonomous vehicle interaction, using multimodal data collected from on-road (real-world) environment.
- Collaborated with engineers to deploy and test autonomous vehicle, collecting data from pedestrian participants and using a drone to capture precise walking and driving trajectories.
- Equipped participants with EEG, ECG, eye-tracking, and other physiological sensors to monitor their reactions during road crossings while interacting with autonomous vehicles; collected and processed data for real-time monitoring.

- Designed and administered pre-experiment and post-experiment questionnaires, assessing pedestrian behavior, perceived danger, stress, and decision-making processes when encountering autonomous vehicles.

Expert driving and user evaluation model **06/2023 – 01/2024**

Tsinghua University, Institute for AI Industry Research ***(As Research Assistant)*** *Supervisor: Prof.Jiangtao Gong*

- Design experiments and have completed 25 sets: one expert driver drives the vehicle through urban road routes, and two passengers ride in the vehicle to assist in evaluating the driver's driving behavior.
- Analyze the subjective questionnaires of drivers and passengers, and conduct in-depth interviews with them after the experiment. From the interview content, the evaluation criteria for driving behavior are obtained through coding.
- The corpus is formed through coding, and the corpus of expert driving is classified into categories corresponding to the strategic layer, tactical layer, and operational layer to form a driving decision-making framework and provide it to LLM learning.

Design Futures - Futurescaping generator Research **05/2023 – 11/2023**

Tsinghua University Academy of Fine Arts ***(As Research Intern)*** *Supervisor: Prof.Zhiyong Fu*

- Background: As an innovative anticipatory action, the focus of design is turning to a future-oriented perspective. In this direction, it is necessary to analyze culture, images, models and design paradigms to explore how AIGC technology can help people better Design for the future.
- Main work: Use actor network diagrams to visualize more than 40 speculative design cases, Build an AIGC generative design interaction framework, Use chatGPT, midjourney and other tools to simulate the generator prototype, Adjust prompt word parameters and usability testing.

Research on human-machine empathic interaction of intelligent products **10/2022 – 02/2023**

Tsinghua University Academy of Fine Arts ***(As Research Intern)*** *Supervisor: Prof.Zhiyong Fu*

- Background: This study explores whether intelligent assistants can improve the efficiency of group discussions and obtains design suggestions to create more efficient and practical tools for collaborative tasks.
- Main work: Use grounded theory to code user perception corpus of more than 70 smart products, Searched the literature and sorted out more than 20 product emotional models, Use the Wizard of Oz method to organize Organized 4 group experiments workshop. Design scales and questionnaires. Organize validation focus groups.

Industry Experience

Applify AI WritingPal **06/2023 – 09/2023**

Intern UX Designer *Boston, MA(remote work)*

- Main work: Product interaction design. User interface design. User usability testing

OPPO **05/2019 – 01/2020**

UX Designer *Guangzhou China*

- Main work: User study. Product interaction design. UI interface design. User usability testing.

Skills

Programming Skills: Python, Java, JavaScript
Technical Tools: SAS OnDemand for Academics, SPSS, Smarteye, EEG (NIC-2), D-LAB, PhysioLAB, Figma

Service

Reviewer of CHI2024, CHI2025 **2023-2025**

Reviewer of CSCW2025, CSCW2026 **2024-2025**

Honors & Awards

The 2nd Academic Scholarship For Postgraduate **12/2023**

The 2rd Prize, China Creative Challenge Contest **11/2023**

The 3rd Prize, Global Service JAM 2023 **03/2023**