Xiaoji Zheng

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Education

Southeast University, BS in Computer Science — Sept. 2020 – June 2024

- GPA: 3.87/4.0 (rank: 5/113)
- **Honor:** National Scholarship, President's Scholarship

Tsinghua University, MS in Autonomous Driving — Sept. 2024 – June 2027

- GPA: 4.0/4.0 (rank: 1/56)
- **Honor:** National Scholarship

Experience

Research Assistant, Institute for AI Industry Research (AIR), Tsinghua University – Beijing, China — Aug. 2023 – Present

- Enhanced motion prediction models using Large Language Models (LLMs); participated in the Waymo Open Dataset Challenge (Motion Prediction track)
- Preprocessed and analyzed driver physiological data to improve end-to-end autonomous driving algorithms with cognitive signals
- Lead a team to develop a cognitive embodied world model for autonomous driving
- Administered the HCI group server and trained members in essential tools such as Git and remote computing

Software Engineer Intern, HUAWEI – Nanjing, China — Sept. 2023 – Mar. 2024

- Conducted technical pre-research for the Network Performance Management (NPM) project
- Independently designed and implemented a flow-level packet load balancing algorithm for the NPM probe
- Achieved a reduction in packet loss rate from 50% to 10% under extreme network conditions

Publications

[1] **Learning to Drive with Two Minds: A Competitive Dual-Policy Approach in Latent World Models** (In Submission) [website] [arxiv] [github]

Xiaoji Zheng*, Ziyuan Yang*, Yanhao Chen, Yuhang Peng, Yuanrong Tang, Gengyuan Liu, Bokui Chen, Jiangtao Gong

- We train a latent world model in the imitation loop while utilize it in the reinforcement loop
- Unify imitation learning and reinforcement learning under a world-model-driven framework, and explore how to combine the advantages of the two learning methods

[2] **Embodied Cognition Augmented End2End Autonomous Driving** (NeurIPS 2025) [neurips]

Ling Niu, Xiaoji Zheng, Han Wang, Ziyuan Yang, Chen Zheng, Bokui Chen, Jiangtao Gong

- Based on self-collected <EEG, video> pair dataset, aligning cognitive encoder and perception encoder via contrastive learning methods
- Enhanced an end-to-end autonomous driving model by integrating the cognition-aligned perception encoder

[3] **Large Language Models Powered Context-aware Motion Prediction in Autonomous Driving** (IROS 2024) [website] [arxiv] [github]

Xiaoji Zheng, Lixiu Wu, Zhijie Yan, Hao Zhao, Chen Zhong and Jiangtao Gong

- Teaching Large Language Models (LLMs) to interpret BEV-style traffic scene visualizations and generate high-level semantic information, including ego intentions, affordances, and drivable areas
- Enhanced motion prediction models by incorporating high-level semantic cues generated by LLMs

[4] **Extended VR: Exploring the Integration of VR Experiences and Real-world Engagement** (DIS 2023) [video] [paper]

Xiaoji Zheng, Shaojun Sun, Ying Cao, Jiatong Li, Ding Ding, Zhuying Li

- Collected user behavior data to bridge virtual experiences with the physical world
- Proposed the "Extended VR" design paradigm, which encourages users to re-engage with the real world through virtual experiences