Zi Yin

Tsinghua Laboratory of Brain and Intelligence (THBI), Tsinghua University, Beijing, P.R. China
TEL: (+86) 176-0000-6998 Email: myinzi123@gmail.com Github

EDUCATION

Department of Psychology, THBI, Tsinghua University (THU), Beijing, P.R. China
Ph.D. Candidate June 2021 – Present
Research directions: Human-AI Cognitive Disparities, Reinforcement Learning, Large Language Models, AI Agent

School of Technology, Beijing Forestry University (BFU), Beijing, P.R. China
Master of Vehicle Engineering (Exchange to THU) Sept 2018 – June 2021

School of Information and Control, China University of Mining and Technology (CUMT), XuZhou, P.R. China
Bachelor's Degree in Electronic Information Engineering Sept 2014 – June 2018

PUBLICATIONS

- Wang, X., Li, X., Yin, Z., Wu, Y., & Jia, L. (2023). Emotional Intelligence of Large Language Models. arXiv preprint arXiv:2307.09042.
- Yin, Zi, Valentin Yiu, Xiaolin Hu, and Liang Tang. "End-to-end face parsing via interlinked convolutional neural networks." Cognitive Neurodynamics 15, no. 1 (2021): 169-179.

RESEARCH EXPERIENCE

Tsinghua Laboratory of Brain and Intelligence (THBI), Tsinghua University July 2021 – Present
Ph.D. Candidate Supervisor: Dr. Jia Liu

- Environment Connectedness Research: Investigated how the connectedness of environments reflects subjective complexity for the navigation of both AI and Human, utilizing graph theory principles.
  Draft: https://cloud.tsinghua.edu.cn/f/069152d26ab042fd82b0/
- AI & Human Cognitive Exploration: Explored cognitive differences between humans and AI, focusing on the co-evolution of navigational capabilities in open-ended world.
  Details: https://github.com/aod321/AgentEnvCoEvolution
- VR Game Design & Psychological Insights: Crafted a virtual reality game to evaluate and study human navigational prowess within a psychological framework.
- Online Behavioral Toolkit Development: Designed an all-encompassing system using the Jspsych plugin and React Framework, offering a unified platform for curating, overseeing, and analyzing online behavioral psychology experiments.
- Developmental Psychology Platform: Designed a Unity3D video game as an online platform for children to play, while enabling real-time collection of their behavioral data, further supported by WebGL publishing and MySQL database integration.
- Infrastructure Architecture: Architected THBI's computational backbone, comprising 30 devices with 70 NVIDIA A40 graphics cards, and established containerized HPC solutions with BeeGFS distributed storage.
- Marmoset Tech Development: Conceived a PID-centric head posture stabilization tool for marmosets.

Department of Computer Science and Technology, Tsinghua University June 2019 – Feb 2020
Graduate Research Assistant Supervisor: Dr. Xiaolin Hu

- Developed a two-channel interconnected lightweight face segmentation model has been developed and deployed in self-driving vehicles for driver fatigue monitoring.
- Developed an end-to-end deep learning face parsing pipeline STN-iCNN for labeling of facial parts on pixel-level, achieving excellent performance in Helen and CelebAMask-HQ face dataset, and the model can work normally even with faces are partially obscured. Details: https://github.com/aod321/STN-iCNN

College of Engineering, Beijing Forestry University June 2019 – Feb 2020
Graduate Research Assistance Supervisor: Dr. Liang Tang

- Developed a tracked grassland mapping robot based on 3D point cloud SLAM for Beijing Forestry University, which won the top prize in a competition held by the Chinese Ministry of Forestry.
- Designed a facial recognition assistance system for self-driving drivers, for example, driver fatigue monitoring

School of Information and Control, China University of Mining and Technology June 2017 – Oct 2017
Research Assistance Supervisor: Dr. Jian Li

Made a self-driving car that could run around the track of the campus playground

- Built datasets required for the project by recording camera images and user remote commands
- Used C++ to write and compile the improved MobileNet v1 based on the Caffe framework, and deployed it on BCM2837 ARM development board by means of cross compiling

SKILLS

- **Programming Language:** Python, C/C++, C#, Javascript, MATLAB
- **Framework:** Langchain, Acme, Pytorch, Unity3D, Tensorflow, Stable-Baselines3, Ray RLLib
- **Operating Systems:** Linux, iOS, openWRT, RTOS, μC/OS II, ROS/ROS2
- **Others:** Kubernetes, Slurm, OpenMPI, ARM, MIPS, Cadence Allegro

HONORS & AWARDS

- **National Scholarship** for Graduate Students 2021
- **Top1 Place** in the Forestry and Grassland Robot Competition (Organized by the Ministry of Forestry of China) 2019
- **First Prize** in the Intelligent Car Competition of CUMT 2017
- **First Prize** in the Electronics Design Contest of CUMT 2017
- **First Prize** in the Computer Software and Hardware Contest of CUMT 2016
- **First Prize** in APMCM (Asia and Pacific Mathematical Contest in Modeling) 2016

ACTIVITIES

- **Open Source Software and Hardware Maker Space**, CUMT, XuZhou, **Founder, Chair** Oct 2016 – June 2018
- **Self-driving Car and Intelligent Hardware Lab,** CUMT, XuZhou, **Founder, Chair** Mar 2017 – June 2018