Ding (Eric) Ding

(971) 348-7909 · ericding@umich.edu · ericdinging.github.io/mywebsite/

EDUCATION

University of Michigan Ann Arbor, MI, United States
B.S., Computer Science, GPA. 3.95, Dean's List, Dual Degree Program Apr. 2024
Shanghai Jiao Tong University Shanghai, China
B.S., Electrical and Computer Engineering, GPA. 3.78, top 10% Aug. 2024
Skills:
Programming: C++, Python, PyTorch, C, Bash, Matlab, Verilog, CUDA, LabVIEW
Development Tools: Docker, Git, LaTeX, VSCode, Arduino, STM32CubeIDE
Simulation and Modelling: Catia, Matlab, Mathematica, LabVIEW, Pspice, Proteus, Vivado

PROJECTS, RESEARCH, AND WORK EXPERIENCE

Federated Learning Research Assistant May. 2023 - Present
Advised by Professor Mosharaf Chowdhury, SymbioticLab, University of Michigan Ann Arbor, Michigan, United States
- Developed a Federated Learning (FL) resource management system based on a microservice architecture using gRPC protocol and Redis databases. Employed horizontal scaling and database sharding for large scale deployment
- Implemented an advanced scheduler that could increase the average FL job convergence speed by 88%
- Built a distributed FL evaluation system, leveraging datacenter nodes for GPU-accelerated training

Embedded System Developer May 2023 - Sep.2023
Advised by Professor Xudong Fan, The Fan Lab, University of Michigan Ann Arbor, Michigan, United States
- Developed a wearable closed-chamber hygrometer-based device, named Wearable Analytical Skin Probe (WASP)
- Designed a high-performance communication protocol that operates atop I2C and Bluetooth Low Energy protocols
- This protocol enables low-latency communication between microcontrollers, ensuring high-fidelity data collection
- Successfully deployed WASP in experimental setups for measuring insensible sweating (TEWL) and tracking skin dehydration-rehydration cycles

AI Safety Researcher Sep. 2022 - Dec. 2022
Michigan AI Safety Initiative, University of Michigan Ann Arbor, Michigan, United States
- Participated in a seminar series with a focus on the challenge of aligning advanced AI systems with human values
- Built and trained a Reinforcement Learning (RL) model based on Q-learning method to automate a virtual taxi
- Explored issues related to objective alignment in RL, utilizing the simulated taxi environment as a case study

Leader of China May Day Mathematical Contest in Modeling Project Team May 2022
UM-SJTU Joint Institute, Shanghai Jiao Tong University Shanghai, China
- Led a team in the development of a Gray Comprehensive Evaluation model and a Neural Network model using Python and Matlab. Conducted a systematic analysis of a city's fire alarm systems
- Achieved an 85.7% top-1 accuracy in predicting false alarms by utilizing operational logs from various alarm sensors
- Evaluated fire alarm system status across different city districts, helping the allocation of limited firefighting resources
- Our project was awarded the first prize in the 2022 China May Day Mathematical Contest in Modeling

PUBLICATIONS

- A. Sivakumar et al., "WASP: Wearable Analytical Skin Probe," ACS Sensors, 2023. [Manuscript under review].

GRANTS AND AWARDS

The Tang Junyuan Scholarship Nominee . . . . . Aug. 2022
Shanghai Jiao Tong University Pu Yuan Future Talent Program Scholarship . . . . . Jan. 2022
Shanghai Jiao Tong University Undergraduate Excellent Scholarship . . . . . Dec. 2021
Second Prize of Shanghai 2021 CUMCM Mathematical Contest in Modeling . . . . . Dec. 2021
Shanghai Jiao Tong University Merit Student . . . . . Nov. 2021