

Ding (Eric) Ding

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EDUCATION

University of Michigan

B.S., Computer Science, GPA. 3.95, Dean's List, Dual Degree Program

Ann Arbor, MI, United States

Apr. 2024

Shanghai Jiao Tong University

B.S., Electrical and Computer Engineering, GPA. 3.78, top 10%

Shanghai, China

Aug. 2024

Skills:

Programming: C++, Python, PyTorch, C, Bash, Matlab, Verilog, CUDA, LabVIEW

Development Tools: Docker, Git, L^AT_EX, 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 scheduling policy, achieving a 28.5% reduction in the average completion time of FL jobs
- 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