Will Zhengyang WENG

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EDUCATION

Harvard University **Cambridge, MA, US**
Master in Computational Science and Engineering Sept 2025 - Jan 2027 (expected)
Tsinghua University **Beijing, China**
Bachelor of Science in Mathematics and Physic Sept 2021 - June 2025

- **GPA:** 3.96/4.0 (Ranking:1/60)
- **Honors:** Outstanding Graduate of Tsinghua University, First Prize of the 14th Chinese Mathematics Competitions (CMC, 2022), First-class Academic Scholarship (2%; 2021-2022, 2022-2023, 2023-2024)

INDUSTRIAL EXPERIEN

Alibaba Group **Hangzhou, China**
Software Development Intern July 2024 - Sept 2024

- Aimed to provide a locally deployable version of the high performance IoT cloud services offered by Alibaba Cloud.
- Responsible for the logging system for the IoT services. Analyze and define the key information that the logging system must record respectively for end users, maintenance staff, and developers. Implement asynchronous logging and storage. Applied a combination of Redis, ClickHouse and Object Storage Service (MinIO) as database for log storage.
- Benchmark results show that the system sustains 10,000 logs/second with an average latency of 1 ms, while ensuring zero data loss. Delivered a system that has been running smoothly without any issues since going live.

RESEARCH EXPERIENCE

Magnetic real-time tracking solution for Guidewire used in interventional surgery **Beijing, China**
Chinese Academy of Sciences, Institute of Automation July 2024 - Jan 2025

- Aimed to develop a Levenberg-Marquardt based algorithm with magnetic positioning to track guidewire position in interventional surgery.
- Conceptualize and model the magnetic positioning system. Used Hall sensor to track small magnetic bead embedded in the guidewire. Using the magnetic dipole model, derived the physical process of estimating the position and orientation of the magnetic bead from magnetic field data, and computed the Jacobian matrix required for the LM algorithm.
- Implemented functional model and conducted collaborative experiments with Peking Union Medical College Hospital.

RL-driven distributed manipulation system via tactile sensing **Beijing, China**
Tsinghua University, Institute for Interdisciplinary Information Sciences July 2023 - Jan 2024

- Aimed to train Arraybot, an RL-driven distributed manipulation system via tactile sensing, to accomplish different tasks such as lifting, flipping and relocating objects in different shapes through deep reinforcement learning.
- Utilized NVIDIA IsaacGym for large-scale physical simulation, built iterative robot models, and structured/tuned deep reinforcement learning algorithms. Conducted both simulation training and physical robotic experiments.
- Developed a functional system that achieved target actions reliably in simulated environments and built a working robot prototype for real-world testing. Our paper was accepted by ICRA 2024.

Ultimate bearing capacity of foundations searching with Reinforcement Learning **Beijing, China**
Tsinghua University, School of Civil Engineering Feb 2023 - Sept 2023

- Aimed to implement an efficient searching algorithm based on physical formulars and random search program from CAS Academician Prof. Chen's team for calculating the ultimate bearing capacity of foundations.
- Defined the problem in a reinforcement learning framework, specified the reward function, and implemented the PPO algorithm.
- Used the original program to build datasets for evaluating and fine-tuning RL algorithm. The new search algorithm achieved about 10,000 times speed improvement under 99.99% accuracy level.

SKILLS

Programming: C++ (Modern), Python (PyTorch, Numpy, pandas, matplot, etc), Java (SpringBoot), Linux, Git, SQL
Core Courses: Calculus, Linear Algebra, Probability, Statistical Inference, Stochastic Process, Digital Electronics, Data Structure, Operating System, Database, Computer Networks, High Performance Computing