Maizi Liao

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Education

- **University of Waterloo** — Waterloo, Canada
  Master of Applied Science in Computer Engineering — *May 2020 – June 2022*
- **University of Waterloo** — Waterloo, Canada
  Bachelor of Applied Science in Electrical and Computer Engineering — *September 2015 – April 2020*

Experience

- **University of Waterloo** — Waterloo, Canada
  Research and Teaching Assistant — *May 2020 – June 2022*
  - Conducted original research about the application of game theory on blockchains
  - Modeled the Algorand protocol as a Bayesian game
  - Proposed IRS, an incentive-compatible reward scheme for Algorand
  - Studied equilibrium strategies under IRS and derived necessary conditions to incentivize participation
  - Improved the implementation of Malcolm, a cooperative load balancer at rack scale
  - Designed the quizzes and tutored the labs of ECE350, a real-time operating system course
- **Sumo Logic** — Redwood City, USA
  Cloud Backend Engineer — *September 2019 - December 2019*
  - Worked in the Security and Analysis team to build a platform for monitoring security related logs
  - Developed a new feature to access external information about the logs
  - Documented the design and the implementation of the new feature
  - Gained working experience with Scala, Spring, Avro and OpenAPI
- **Rakuten** — Tokyo, Japan
  Software Engineer — *January 2019 - April 2019*
  - Worked in the AI Platform Development team to build a platform for managing chatbots
  - Developed and maintained backend APIs using JavaScript and TypeScript
  - Leveraged Scala and Spark to provide KPI data of the platform and chatbots
  - Implemented an ETL program in Go to process data for analytic usage
  - Improved the performance of a history extraction microservice written in Python
  - Gained working experience with Google Cloud Datastore, Kafka and ElasticSearch
- **Mespere LifeSciences** — Waterloo, Canada
  Software Engineer — *April 2016 - August 2018*
  - Leaded the development of a patient monitoring software using C# and WPF
  - Refactored the software to reduce code redundancy and improve performance
  - Developed a prototype of the software on the Android platform using Java
  - Ported the software to Raspberry Pi using Python
  - Visualized and analyzed sensor data using NumPy and SciPy
  - Modified the firmware of the sensor in C to meet new requirements
  - Helped the hardware engineer to automate the production process

Projects

- **IRS**: An incentive-compatible reward scheme for Algorand
- **Malcolm**: A cooperative load balancer at rack scale through multi-agent reinforcement learning
- **WASM Game of Life**: An implementation of Conway's Game of Life in Rust, WebAssembly and JavaScript
- **In-door Navigator**: An Android application for in-door navigation

Awards

- Terminal Midwest Regional, 12th Place — March 2021
- Terminal CMU vs. UWaterloo, 4th Place — September 2020
- Richard and Elizabet Madter Graduate Entrance Award — May 2020
- Univerity of Waterloo President's Scholarship — September 2016