XINLONG YIN

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EDUCATION

Georgia Institute of Technology — *August 2021 - December 2022*
Master of Science in Computer Science — *Cumulative GPA:* ***4.0/4.0***

University of Michigan, EECS — *August 2019 - May 2021*
B.S.E. in Computer Engineering — *Cumulative GPA:* ***3.924/4.0***

Shanghai Jiao Tong University (Dual Degree) — *September 2017 - August 2019 & May 2021 - August 2021*
B.S.E. in Electrical and Computer Engineering — *Cumulative GPA:* ***3.47/4.0***

Selected Coursework: Cloud Computing, Distributed Systems, Computer Networks, Operating Systems, Database Management Systems, Computer Security, Compiler Construction, Embedded Systems, Search Engine, Computer Graphics, Machine Learning

SKILLS

Languages: C++, C, Python, Golang, HTML, CSS, Javascript, SQL, Java, NoSQL, Typescript, R, C#
Frameworks/Tools: React, Flask, MySQL, SQLite, Kubernetes, ZooKeeper, Redis, Wireshark, AWS, Azure, Linux, TensorFlow, PyTorch, Docker, WebGL, Three.js, OpenMP, Open MPI, gRPC, STM32CubeIDE, Android Studio, Ethereum, Ryu Controller

PROJECT EXPERIENCE

System Design of a Search Engine — January 2021 - April 2021
University of Michigan — *Instructor: Prof. Nicole Hamilton*

- Developed a distributed crawler using C++ that can download **2200 web-pages per second** while obeying the "robots.txt" rule, and **automatically recover from crashes** by check-pointing the status data every 10 minutes.
- Designed a communication protocol that allowed the servers to cooperate and crawl distinct web-pages, and accept new servers.
- Deployed the crawler onto 11 **AWS** and **Azure** servers, and downloaded **500 million** web-pages in 5 days to build indices.

Financial Services Website — January 2020 – December 2020
Multidisciplinary Design Program at Umich, Sponsored by Principal Financial Group, Inc. — *Sponsor Mentor: Tony Tavegia*

- Built a one-stop information website of benefit packages with a cost estimator and a forum using **React**, **Flask**, and **Agile**.
- Developed "post", "delete", "like", "bookmark", "comment", and "filter" features on the forum, and stored the related data into **MySQL** tables that satisfy BCNF.
- Deployed the website onto **Google Cloud Platform**, and used **CircleCI** to enable automatic build, test, and deployment.

Data-center Network Simulation — January 2022 – May 2022
Georgia Institute of Technology — *Instructor: Prof. Umakishore Ramachandran*

- Implemented a set of **OpenFlow** rules on **Ryu Controller** and **Mininet** that can find out widest routing paths between hosts, monitor the port and flow status, and dynamically redistribute flows based on network topology and traffic changes.
- Developed a **Network Functions Orchestrator** that allows load-balancing and dynamic scaling of **Firewalls** and **NATs**.

RESEARCH EXPERIENCE

Cyber-attack Simulation — January 2020 - April 2020
Research Assistant at Network Research Group, UMich — *Mentor: Prof. Ranjan Pal, Prof. Mingyan Liu*

- Developed a GUI app using **PyGTK** that simulates the infection and attack process of cyber-attacks with SIS and SIRS models.
- Analyzed the loss of attacks using **GARCH Model**, **QQ-plot**, and **Autocorrelation Function**.
- Published my work in **IEEE/INFORMS Winter Simulation Conference**, **IEEE IoT Journal**, and **ACM Transactions of Management Information Systems (TMIS)**.

Machine Learning from Label Proportions — May 2020 - August 2020
Research Assistant at Network Research Group, UMich — *Mentor: Prof. Ranjan Pal, Prof. Mingyan Liu*

- Devised a semi-supervised deep learning model with TensorFlow that uses knowledge of distributions to predict individual labels.
- Achieved around **30% improvement** in object labeling accuracy compared to the state-of-art method (DLLP).

Automatic hyper-parameter optimization for microservices — January 2022 - May 2022
Research Assistant at Center for Experimental Research in Computer Systems, Gatech — *Mentor: Prof. Calton Pu*

- Modeled the relationship between parameters of different services using the Wise benchmark and Common Information Model.
- Built an automatic parameter optimization tool based on the relationship model and **Nelder-Mead simplex method**.

SELECTED HONORS AND AWARDS

1. 2021 EECS Undergraduate Outstanding Research Award at the University of Michigan
2. Dean's List and University Honors at the University of Michigan in 2020 and 2019
3. 2017-2018 Shanghai Jiao Tong University Scholarship