

Xiangzhu Lu

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[Portfolio Website](#)
[Publications](#)

EDUCATION

University of Waterloo

Master of Applied Science in Electrical and Computer Engineering

Waterloo, Canada

Sep 2022 - Apr 2024

- Field: Communications and Information Systems
- Publications:
 - Author: *Architectural Design and Test Case Analysis of a Simulator for Failure Localization*
 - Coauthor: *A Novel Framework of Failure Localization in Optical Transport Network*
 - Coauthor: *On Real-time Failure Localization via Instance Correlation in Optical Transport Networks*

University of Waterloo

Bachelor of Mathematics in Computational Mathematics

Waterloo, Canada

Sep 2017 - Apr 2022

- Minors: Computing, Combinatorics and Optimization, Economics

SKILLS

- **Programming languages:** HTML/CSS, JavaScript, Python, Java, C, C++, Racket, SQL, AQL, VBA
- **Frameworks:** Node.js, Express.js, Django, React, Angular, Bootstrap, Sass
- **Developer tools:** Linux, Git, MongoDB, MySQL, ArangoDB, Docker, Jenkins, REST API, Wordpress
- **Testing tools:** Junit, Cucumber, Mocha, Jest, Jasmine, Postman

WORK EXPERIENCES

Web Developer

Chengdu Daaisi Electronics Co., Ltd.

Chengdu, China

Jul 2021 – Aug 2021

- Designed and developed the company website using **HTML/CSS**, **JavaScript**, and **React** to ensure cross-browser compatibility and mobile responsiveness, resulting in a 78% increase in advertisement conversion rate.
- Developed backend using **MySQL** and **Django** to efficiently store and manage product information.
- Implemented advanced querying for seamless product filtering and sorting, enhancing user experience.

Mobile Test Engineer

Dayforce

Toronto, Canada

May 2019 – Aug 2019, Jan 2020 – Apr 2020

- Wrote, updated and managed UI and API automation tests utilizing **JUnit** and **Cucumber** to increase test coverage.
- Established and managed automation infrastructure to facilitate feature testing.
- Analyzed daily automation results within **Jenkins** and conducted thorough investigations into product failures.

Full Stack Developer

MindBeacon

Toronto, Canada

Sep 2018 – Dec 2018

- Developed a full-stack Content Management System (CMS) board utilizing **MEAN Stack** (MongoDB, Express.js, Angular, Node.js), enabling therapists to efficiently perform CRUD (create, read, update, and delete) operations on question lists stored in **Azure Cosmos DB**.
- Utilized advanced querying techniques to retrieve question lists from database and dynamically display them in tree structure, enhancing convenience and accessibility for therapists.
- Implemented and managed rigorous frontend and backend testing using **Mocha**, **Jest** and **Jasmine**.

PROJECTS

OTN-based Alarm Propagation Simulator

Sep 2022 - Apr 2024

- Designed and implemented a dynamic topology generator using **Python** to simulate diverse network conditions.
- Implemented an alarm generator capable of executing intricate queries against **MySQL** to simulate real-world scenarios.
- Developed advanced queries in **ArangoDB** to analyze network and alarm flow data.
- Utilized **machine learning** to train a binary classifier, predicting the likelihood of establishing alarm chains.

Traffic Camera Installation Solver

Oct 2023 - Nov 2023

- Developed a **Python** program to generate graphs from street manipulation commands (add, modify, remove).
- Devised a **C++** program to place security cameras at street intersections, minimizing the required number of cameras.
- Developed a **C++** driver program facilitating Inter-Process Communication between programs in various languages.