Xiangzhu Lu

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LinkedIn   Github   Publications

EDUCATION

University of Waterloo   **Waterloo, Canada**
Master of Applied Science in Electrical and Computer Engineering   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   **Waterloo, Canada**
Bachelor of Mathematics in Computational Mathematics   Sep 2017 - Apr 2022
- Minors: Computing, Combinatorics and Optimization, Economics

SKILLS

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

WORK EXPERIENCES

Web Developer, Chengdu Daaisi Electronics Co., Ltd., Chengdu, China   Jul 2021 – Aug 2021
- Designed and developed a cross-browser compatible and mobile-responsive company website using the MERN stack (**MongoDB**, **Express.js**, **React**, **Node.js**), resulting in a 78% increase in advertisement conversion rate in two months.
- Utilized react hooks and performance optimization tools (code splitting, lazy loading, etc.) to improve user experiences.
- Implemented advanced querying to database for seamless product filtering and sorting, enhancing user experience.
- Documented 100% of the website's technical specifications and dependencies.

Mobile Test Engineer, Dayforce, Toronto, Canada   May 2019 – Aug 2019, Jan 2020 – Apr 2020
- Supported the automation of 40% of UI and API test cases using **Java** and **Cucumber**, combine with **Junit**, **Selenium** and **Appium** testing frameworks, resulting in a significant reduction of manual testing efforts by over 400 hours.
- Maintained a 90% pass rate for daily automated tests on **Jenkins** by implementing automated monitoring and correction.
- Collaborated with developers and QA as a Scrum team member to refine testing scope and strategy.

Full Stack Developer, MindBeacon, Toronto, Canada   Sep 2018 – Dec 2018
- Developed a full-stack Content Management System (CMS) board utilizing **Angular**, **Node.js** and **Express.js**, enabling therapists to efficiently perform CRUD 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 200+ frontend and backend tests using **Mocha**, **Jest** and **Jasmine**.

PROJECTS

OTN-based Alarm Propagation Simulator
- 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
- 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.
- Implemented a **C++** driver program facilitating Inter-Process Communication between programs in various languages.