Lingjie (Larry) Li

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TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, Java, JavaScript/TypeScript, HTML, CSS, SQL
- **Operating Systems & Networking:** Linux, Computer Networks, Distributed Systems, Embedded Systems
- **Data & Cloud Technologies:** HDFS, Pytorch, AWS, Google Cloud Platform, Docker, Kubernetes
- **Web Development:** Express.js, React.js, Node.js, REST API, Flask, MongoDB, PostgreSQL, Postman

PROFESSIONAL EXPERIENCE

iSmartWays Technology Inc. Edmonton, AB
Embedded Software Engineer Intern May 2023 - Aug. 2023

- Participated in **V2X scenario testing**, validating critical safety features such as Forward Collision Warning (FCW) and Blind Spot Warning (BSW) to improve vehicle communication reliability.
- Helped design communication protocols between MEC (Multi-access Edge Computing) and RSU over **TCP/IP**, enhancing **real-time** data transmission in vehicle-to-infrastructure (V2I) systems.
- Designed and documented **C-based** data packet structures for MEC–RSU communication, specifying field offsets, checksums, and error-handling logic to support reliable message exchange and system integration
- Developed a UPER encoder/decoder in **C** for efficient processing of ASN.1 message sets, improving the performance of V2X communication protocols.

HackHub Vancouver, BC
Full-Stack Developer Intern (MarketBay Bootcamp Project – [Live Demo: http://3.93.45.172/]) October - December 2024

● Completed a full-time software engineering bootcamp at HackHub, emphasizing industry-grade full-stack development and agile collaboration.
● Engineered a responsive **React.js** frontend featuring dynamic product listings, secure user authentication, and an intuitive user experience.
● Built and maintained a scalable **RESTful** API with **Express.js** and **Node.js**, enabling user management, product workflows, and a custom buyer-seller offer system.
● Deployed the frontend to **AWS S3** and the backend to **AWS EC2**, ensuring high availability, scalability, and CI/CD-friendly deployment workflows.
● Designed and managed data models using MongoDB Atlas and Mongoose, supporting efficient and reliable CRUD operations across users, products, and transactions.
● Integrated real-time communication with **Socket.io**, enabling instant chat between buyers and sellers to enhance user engagement and negotiation flow.

PROJECT EXPERIENCE

Scalable Data Analysis and Predictive Modeling for E-commerce **(Python, Data Science, Machine Learning, HDFS, Cloud Computing)** October - December 2024

- Developed and optimized cloud-based data pipelines using **AWS EC2** and **HDFS** for efficient large-scale data processing.
- Conducted data exploration, sentiment analysis, and predictive modeling on customer reviews, achieving 77.11% accuracy for rating prediction and 84.21% for category classification using **NLP**, **Random Forest**, and a fine-tuned BART model.
- Built and deployed a scalable web application with Next.js and FastAPI, featuring interactive visualizations and **real-time predictions**, hosted on **AWS**.

Gatekeeper Insights **(Embedded Systems Development, Hardware-Software Integration, C Programming, IoT Protocols)** March - April 2024

- Developed an embedded **customer traffic monitoring system** in **C** programming to track real-time store occupancy and analyze traffic trends.
- Integrated **BeagleBone Green (Debian Linux)** and **Arduino** to manage sensor input and peripheral control, including motion sensors, laser-photocell setups, MCP9808 temperature sensors, NeoPixel LEDs (**PRU**), and displays, by programming **C-based drivers** for reliable hardware interaction.
- Implemented **UDP-based data transmission in C**, sending real-time occupancy data to a **JavaScript (Node.js) web dashboard**, with **IndexedDB** for storage and visualization.
- Designed **joystick-controlled mode switching in C**, toggling between **People Count, Temperature, and Smile modes**, displayed on an **8x8 LED matrix**, while configuring the **14-segment display (I2C GPIO)** for **occupancy count** and the **4-digit Grove display** for **current time**.

EXTRACURRICULAR EXPERIENCE

Computer Science Teaching Assistance Burnaby, BC
Simon Fraser University December 2024 - Present

- Assisted students in grasping fundamental computer science topics, including algorithms, data structures, object-oriented programming, and memory management, while providing support for assignments and debugging.
- Responsibilities included supervising exams, grading assignments, and providing guidance during lab sessions and office hours.

EDUCATION

Simon Fraser University Burnaby, BC
Master of Professional Computing Science in Big Data September 2024 - Present
Bachelor of Science in Computing Science September 2019 - August 2024