Linfeng Gao

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Education

University of Toronto
M.Eng. in Electrical and Computer Engineering — Sept. 2024 – Present

University of British Columbia
B.A.Sc. in Electrical and Computer Engineering — Sept. 2020 – Jun. 2024

Technical Skills

- **Programming Languages**: Python, JavaScript, C, SQL, Shell
- **Frameworks & Tools**: Node.js, Flask, React, MongoDB, AWS, Docker, Hadoop, Qt Creator
- **Domain Expertise**: Fuzzing, FPGA (Quartus, Nios II, DE1-SoC, ModelSim, SystemVerilog)

Experience

Huawei Technologies Co., Ltd. | Hangzhou — Jul. 2025 – Oct. 2025

Software Testing Intern

- Contributed to the development of a fuzzing tool for ArkTS (HarmonyOS programming language), designing grammar generation and adaptation strategies.
- Tested and validated JSVM (JavaScript Virtual Machine) functionalities to ensure compliance with official specifications.

Ericsson (China) Communications Co., Ltd. | Beijing — Apr. 2025 – Jun. 2025

AI Developer Intern

- Built machine learning models based on product logs to automatically detect power amplifier (PA) failures, reducing manual inspection costs.
- Extracted and cleaned device log data via SQL and regular expressions for unstructured text parsing.
- Trained models with XGBoost and LogBERT, and visualized decision processes for interpretability.

Psychometrics and Responsible AI Lab | University of Toronto — Sept. 2024 – Apr. 2025

Research Assistant

- Developed large-scale academic article retrieval, classification, and content extraction models leveraging OpenAI ChatGPT API.
- Automated data pipelines for experiment data collection, aggregation, and reporting of results and conclusions.
- Applied NLP techniques for preprocessing and analysis, enhancing research productivity in psychometrics.

National Key Lab of Millimeter Waves | Southeast University — May 2024 – Aug. 2024

Research Assistant

- Developed a host computer system in C++ using Qt Creator, enabling system control and state monitoring.
- Designed and optimized control and adaptation circuits, reusing array panel resources to improve signal routing and power management efficiency.
- Supervised undergraduate students on IoT projects, covering system design, integration, programming, and performance optimization.

Projects

Accurate Detection-Based Curbside Parking Space Recognition System — Sept. 2023 – May 2024

UBC Digital Media Lab

- Implemented an end-to-end curbside parking recognition system using YOLOv7 and motion analysis.
- Trained and optimized YOLOv7 models on the Compute Canada platform.
- Built a NoSQL cloud database with MongoDB for efficient data management and storage.
- Integrated edge computing and LoRaWAN for long-range communication and device connectivity.
- Developed a cross-platform mobile app in React Native, supporting Android, iOS, Android Auto, and CarPlay.

Bomberman Game on DE1-SoC Jan. 2023 – May 2023

- Designed a web-based game interface using HTML, CSS, and JavaScript with account management, real-time room search, and character control.
- Built a Flask-based server providing APIs for game data processing, and implemented low-latency communication via WebSockets.
- Deployed the game system on DE1-SoC with Nios II, enabling Wi-Fi data transfer and VGA output for display.
- Implemented AI opponents with path-planning algorithms for single-player mode.

UBC Mobile Community Chat Platform Sept. 2022 – Dec. 2022

- Designed a campus community platform architecture supporting real-time chat, posts, comments, reports, and location-based facility search.
- Built backend services with Node.js and MongoDB, deployed on AWS for data storage and business logic.
- Integrated Google APIs for location-based search and interactive map features.
- Enhanced app security and performance through authentication, input validation, and functional, compatibility, and UI testing.

PUBLICATIONS

- Jing, Y., Huang, T., **Gao, L.**, Deng, J. (2024). *Insulator detection based on FA-YOLO network with improved feature extraction ability.* IET Image Processing, 00, 1–17. https://doi.org/10.1049/ipr2.13197