

# Fred Zhao

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## EDUCATION

### Simon Fraser University

*Master of Engineering*

Feb 2023

*Burnaby, BC, Canada*

### Beijing University of Posts and Telecommunications

*Bachelor of Logistics Engineering*

Jun 2020

*Beijing, China*

## EXPERIENCE

### Web Developer

*GoodBot*

Nov 2023 – Present

*Vancouver, BC, Canada*

- Implement new features, functionalities, and design updates based on organizational needs.
- Drive content updates and optimizations to maintain accuracy and relevance, contributing to online presence.
- Collaborate closely with UI/UX designers to create web and mobile applications using React, Next.js and Node.js.

### Software Engineer

*Ericsson*

Aug 2019 – Dec 2019

*Beijing, China*

- Developed and improved a Java application for conversion between Google Protocol Buffers and XML/CSV files.
- Wrote scripts in Python, leveraging threading library, to perform load testing of users making over 100 concurrent requests, reporting metrics such as login time, query time, start time and end time.
- Leveraged MobaXterm for project management, Git for version control, and Pytest for test driven development.
- Collaborated cross-functionally with engineers and product managers to ensure timely delivery of software components, maintained and updated applications following agile principles.

### Research Assistant

*Institute of Computing Technology, Chinese Academy of Sciences*

May 2019 – Dec 2019

*Beijing, China*

- Collaborated within a research team focused on thyroid tumor prediction using deep learning techniques.
- Processed medical images to generate mask images and JSON files, optimizing data for further research.
- Leveraged PyTorch and TensorFlow to train models to predict thyroid abnormalities through X-ray images, performed literature research to support the team.

## PROJECTS

### Human Resource Management System | *Java, Vue.js, Spring Boot, MySQL, Redis*

Aug 2023

- Built a full-stack web application for organizations to management employee information.
- Employed Vue.js and Element to build web front-end based on an open source front-end scaffolding.
- Created CRUD operations with Spring Boot and MyBatis-plus, designed and implemented a RESTful API.
- Employed MySQL as the relational database to store and update data, optimized authentication using Redis to cache the token to improve access speed.

### Aerial Object Detector | *Python, PyTorch, Detectron2, Google Cloud Platform*

Sep 2022 – Oct 2022

- Implemented and enhanced a deep convolutional neural network to detect objects in aerial images.
- Leveraged Python, PyTorch, Detectrone2 and Google Colaboratory to configure and train the model.
- Improved accuracy from baseline configuration from 59% to 86.6% by utilizing the data augmentation method and adjusting hyper parameter settings of the convolutional neural network.

### Network Attacks Simulator | *C++, ns-3, VMware, Ubuntu*

Feb 2021 – Apr 2021

- Designed and simulated three network attacks: Black Hole Attack, Gray Hole Attack, and Wormhole Attack.
- Analyzed attacks' impact on performance metrics, including throughput, packet loss ratio, and end-to-end delay.
- Harnessed ns-3 and C++ code to implement each attack scenario, collecting and analyzing performance data.

## TECHNICAL SKILLS

**Languages:** Java, Python, JavaScript, HTML, CSS, C, C++, SQL, MATLAB

**Libraries/Frameworks:** Spring, Spring Boot, React, Next.js, Vue.js, Node.js, Pytest, PyTorch, Keras, TensorFlow, Numpy, pandas, Matplotlib

**Tools/Databases:** Git, Linux, AWS, Google Colab, MySQL, PostgreSQL, Redis, Postman, Maven, IntelliJ, VS Code, Eclipse, VMware, MobaXterm, PowerDesigner, Jupyter Notebook, VMware, Wireshark

**Relevant Coursework:** Analysis of Algorithms, Data Mining, NLP, Computer Vision, Deep Learning, Communication Networks, C++ Programming, Application of PLC, Database Technologies, Website Design, Project Management