Jeremy (Ruihan) Wei

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HIGHLIGHTS OF QUALIFICATIONS

- Languages: **C#, Python, Java, JavaScript/TypeScript, C/C++, MATLAB**
- Technologies: **React JS, Redux, Angular JS, Express JS, Node JS, MongoDB, SQL, .NET**
- Tools: **Git, Jira, Jenkins, Heroku, OpenCV, PyTorch, TensorFlow, Azure DevOps Server (TFS), Bitbucket, GitHub, Linux**

WORK EXPERIENCE

Full Stack Developer | **IBM Corp.** Toronto, Canada |Sept. 2019 – Dec. 2019

- Developed features and resolved defects for Watson Financial services using **JavaScript/TypeScript** (**React-Redux**) frontend, **T-SQL** and **C#** backend
- Implemented universal wildcard search and refactored/enhanced all search filters leading to **30%** elevated performance
- Implemented user query audit logging, audit log csv exporting following the **REST API** architectural style and drag-and-drop (**React**) logic to retained large clients
- Refactored multi-threaded user state/data migration, email notification logic and user data model modification logic to improve code cleanliness and remove unintended behaviours

Deep Learning Research Developer | Vision and Image Processing Lab, University of Waterloo Waterloo, Canada | May. 2020 – Aug. 2020

- Developed COVID-19 mobility-based forecasting web application using **React JS**, **Python** Flask framework, **MongoDB** and **PyTorch** library. Deployed with Heroku (covid-scenario-modelling.herokuapp.com); training scheduled with Unix **Cron**.
- Developed Convolutional Neural Network and Long Short-Term Memory model for multivariate time series forecasting of COVID-19 spread in Canada in **Python**, utilizing **TensorFlow**, **Keras** and **PyTorch**
- Developed fluid dynamics simulations for viral transmission under **Linux** environments, accelerated by **graphical neural nets**

Software Developer | Focal Healthcare Inc. Toronto, Canada | Jan. 2019 – April 2019

- Designed, implemented and unit tested a software/hardware dependency/profile modifier in **C#** (UI in **WPF/XAML**), following the **MVVM** architecture
- Projects decreased profile/dependency editing/creation time by **60%** and improved development and client support efficiency
- Automated build, release and QA processes with **Python**, **C#**, PowerShell, CMake and MSBuild scripts; Projects improved QA efficiency and reduced installation cycle complexity

Software Developer | Laborie Medical Technologies Inc. Mississauga, Canada | May 2018 – Aug. 2018

- Developed release notes generation and project baseline analysis for a workflow management tool in **C#** utilizing MVVM and **async processing** (UI in WinForms); refactoring increased data extraction efficiency by **20%**
- Developed RFID scan and hardware noise simulations and performed defect resolution in **C#** for Laborie's core software application (UI in **WPF/XAML**, architecture in MVVM) and hardware emulators
- Integrated internal and external tools such as obfuscators into CI builds through development of C#/CLI applications

Research Assistant, Department of Engineering, University of Waterloo Waterloo, Canada | Sept. 2018 – current

- Developing **Natural Language Processing** variational autoencoder model for verification of financial reports in **Python** using **PyTorch**
- Development of a robotic head in **C** with **Raspberry Pi;** established low-level control of motors and encoders through the CAN communication protocol; this will enable future development of a model-predictive controller

PROJECTS (GitHub Links Provided)

ObjectVersionControl Web Application 2019-2020

- Full stack App that performs real-life "version control" with applications in forensics and personalized object tracking
- Built with the **Flask framework, Python** and **MySQL** backend, **JavaScript** frontend, real-time object detection powered by OpenCV, YOLO and TensorFlow; design followed the layered architecture and **REST API** styles

Gitarmi Freelancing/Project Hosting Web Application ongoing

- Developing web platform for artists to host and customize digital portfolios and engage in freelancing activites with other users, utilizing **Angular** JS, Angular Material, **Node** JS, Express JS and **MongoDB**

Sign Language Detection 2019-2020

- Developed deep learning model to detect and classify the sign language alphabet in real time utilizing **Tensorflow**'s object detection API and Convolutional Neural Nets in **Python**

Software Team Lead of NeoWulf Design: Building an Exoskeletal Grip Assist 2018-2019

- Interfaced with Myo armband from Arduino and PC through Bluetooth in **C++** to acquire and process EMG signals and facilitate biometric control of exoskeleton; project allowed a quadriplegic to control finger movements with biceps

EDUCATION

- Candidate for Bachelor of Applied Science, Biomedical Engineering, **Artificial Intelligence** option (specialization), University of Waterloo 2017–2022