

Bowen Luo

Portfolio: plop.github.io | Email: bowen.luo@gmail.com | Github: <https://github.com/plop>

Languages: C#, C++, C, Python, Java, HTML/CSS, Javascript, Bash, MIPS, ARM & R
Tools: Visual Studio, VS Code, Git, Processing, Pycharm, Jira, Android & Linux

EXPERIENCE

- **Software Developer** | [Virtamove](#) *Jan 2020 - Apr 2020*
 - Individually developed a feature detecting compiled architecture for Windows binaries using memory mappings in C++, **improving app migration success rates**.
 - Individually developed a file and registry rehosting service migrating between matching OS in C++.
 - Worked extensively with native Windows API to query services, registries, and binaries.
 - **Junior Developer** | [HelloGbye](#) *May 2019 - Aug 2019*
 - Researched and prototyped improvements (GRU, ELMo, Attention layers) to an ML model using Keras and Tensorflow, **increasing Natural Language Processing accuracy**.
 - Wrote parsers and tokenizers for JSON and natural language in C# and Python to facilitate training data transfer.
 - Generated C# classes using Visual Studio's T4 text templates for dynamic JSON parsing.
 - **Feedback Controllers Subteam** | [Watonomous](#) *Jan 2019 - Apr 2019*
 - Maintained a PID feedback control algorithm responsible for sustaining the path of the autonomous vehicle.
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PROJECTS

- **Machine Learning Projects** | **Python, Java**
 - [Flappy Bird AI](#)
 - Instantiates and updates hundreds of neural networks simultaneously to apply an evolutionary algorithm to play Flappy Bird autonomously.
 - Created a playable Flappy Bird replica made using Java with the Processing engine.
 - [English Detection Neural Network](#)
 - Developed a neural network from scratch in Python using the Numpy API to illustrate the results of machine learning on language recognition.
 - Demonstrates back-propagation in learning algorithms using sigmoid activated perceptron layers, achieving 95% accuracy.
 - [Connect](#) | **Hack the North, Java, Android Studio**
 - Developed and collaborated on a Wifi sharing service on Android Studio responsible for sending and receiving NDEF messages using NFC.
 - Prototyped the sending of images and PDF as URI.
 - [Snake Pathfinding](#) | **Java**
 - Implemented various pathfinding algorithms into the classic game of Snake using the Processing engine. Users can play against the AI to explore their decision patterns.
 - Real-time path updating allows for a dynamic response to user interactions.
 - [Web Portfolio](#) | **JavaScript, CSS, HTML**
 - Designed and developed an interactive web portfolio using Javascript and the Bootstrap API to accommodate user experience.
 - Provides a platform to dynamically display my projects and more.
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EDUCATION

- **University of Waterloo** | **Bachelor's of Computer Science Candidate**
 - Cumulative Average: 80% *Expected graduation, May 2023*