

Bowen Luo

Portfolio: plop.github.io | Email: bowen.luo@gmail.com | Github: github.com/plop | Cell: 206 636 8848

Coursework: ML, Graphics, HPC, Distributed & Cloud, Networks, Optimization, Compilers, DBs
Languages: Python, C++, C, Java, C#, Go, CUDA, Javascript

EDUCATION

University of Chicago | Masters in Computer Science Candidate

Dec 2024 expected graduation

University of Waterloo | Bachelor of Computer Science | Combinatorics & Optimization Minor

EXPERIENCE

Arista Networks | Software Engineer (C++, Python) *Vancouver*

Sept 2022 - Dec 2022

- Individually developed network switch CLI commands to asynchronously query information on routes in the forwarding tables across VRF instances, **improving routing telemetry data**.
- Prototyped efficiencies** to routing table adjacency trimming by consolidating optimizations done during next-hop creation and interface-down adjacency review.
- Built test framework features **detecting tight-loops** in tasks of ASIC platform agents at runtime.

Oracle Netsuite | Software Developer (Java, SQL) *Remote*

Jan 2022 - Apr 2022 & May 2021 - Aug 2021

- Planned architecture** of and implemented objects/services for a new data storage (UMD) and manipulation pipeline; wiring (Guice), persisting, and exposing SQL entries to **perform Oracle Netsuite platform rewrite**.
- Built frontend pages (React/Preact) along with the necessary data pipeline services and endpoints, researching and implementing UMD record querying for request validation.
- Individually wrote and upgraded endpoints to fetch and manipulate SQL data.
- Implemented scheduled SQL tasks and contributed to a web-based frontend (UIF, JavaScript), **delivering continuous features for client requests**.

Martello Technologies | Software Developer (C#) *Remote*

Sept 2020 - Dec 2020

- Individually upgraded the backend codebase of a data consolidation platform (ELK Stack, Akka.NET), migrating between major versions of Elasticsearch and **creating new data visualization options**.

VirtaMove | Software Developer (C++) *Remote*

Jan 2020 - Apr 2020

- Individually developed a feature detecting the memory-mapped compiled bitness for Windows binaries, **improving app migration success rates** across Windows OS of varying architectures.
- Individually developed a native file and registry rehosting service migrating between matching OS, working with kernel interfacing Windows API to query services, registries, and binaries.

Amgine | Junior Developer (C#, Python) *Toronto*

May 2019 - Aug 2019

- Researched and prototyped improvements (GRU, ELMo word embedding, attention layers) to an NLP ML model (Keras, Tensorflow), **improving sentiment analysis of emails**.
- Wrote a custom JSON parser and email tokenizer to **enable training data transfer/generation**.
- Generated C# classes (T4 text templates) for dynamic JSON parsing.

PERSONAL PROJECTS

Photorealistic Raytracer | C++

- Demonstrating supersampling anti-aliasing, mirror/glossy reflection and refraction, soft shadows, texture and bump mapping, and Phong illumination. Scene rendering specified with Lua.

Parallelized Raytracer | Go

- Demonstrating BSP parallelism for Phong illumination and Gaussian denoising, implemented with a CV-based barrier and lock-free DEQueue for work-stealing between threads.

Autochess Data Analysis | Python

- Data analysis on the Teamfight Tactics auto-battler using RiotAPI, Pandas, and FastAPI to extract relevant gameplay trends and strategies from matches between current top players.

Machine Learning Models | Python, Java

- Semi-supervised image classification **model** on MNIST using K-means and KNN for cluster labeling.
- Perceptron-based neural networks demonstrating **evolutionary** and **back-prop** algorithms.