

# Bowen Luo

Portfolio: [plop.github.io](https://plop.github.io)

Email: [bowen.luo@gmail.com](mailto:bowen.luo@gmail.com)

Github: <https://github.com/plop>

---

**Languages:** C#, C++, C, Python, Java, Javascript

**Interests:** AI/ML, Graphics, Networks, Cloud/Distributed Computing, Compilers, DBs

---

## EXPERIENCE

### Arista Networks | Software Engineer (C++, Python)

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, JavaScript)

Jan 2022 - Apr 2022

- **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 necessary data pipeline services and endpoints, researching and implementing UMD record querying for request validation.

### Oracle Netsuite | Software Developer (Java, SQL)

May 2021 - Aug 2021

- Individually wrote and upgraded endpoints to fetch and manipulate SQL data.
- Implemented scheduled SQL tasks and contributed to a web-based frontend (UIF, JS), **delivering continuous features for client requests**.

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

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++)

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)

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.
- 

## EDUCATION

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

**University of Chicago** | Masters in Computer Science Candidate

May 2024 expected graduation

---

## 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.

### Connect - Hack the North | Java, Android Studio

- Service to send/receive NDEF messages using NFC. Prototyped sending images and PDFs as URI.

### ML Models | Java, Python

- 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.