

# Andrew Jemin Choi

🇨🇦 Canadian Citizen 🇺🇸 USA Permanent Resident

✉️ by.andrewchoi@gmail.com | 🏠 ajchoi.xyz | 💻 andrewjeminchoi | 🌐 ajchoi

## Experience

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### Software Engineer

#### Algorand (🌐 algochoi)

Jun 2021 - Present

- Worked on open-sourced consensus protocols, compilers, tools, and infrastructure in Go for a \$1Bn+ market cap blockchain (🌐 go-algorand), founded by Turing Award cryptographer Silvio Micali
- Worked on the Algorand Virtual Machine (smart contract assembler) and PyTeal (high level contract language) to allow safer and better programmability for smart contracts
- Introduced OpenSearch telemetry services and developer infrastructure to Conduit (blockchain data streaming pipeline)
- Implemented highly requested algod (daemon exposing node/network functionality) features and led work to sunset v1 algod APIs to complete migration to v2
- Developed, maintained, and deployed features, tests, and packages for the Go/Java/Python/TypeScript SDK library
- Reduced build and integration testing times by 60% by refactoring, optimizing, and using a dev-mode network in four repos, which led to large cost savings in CI and improved developer experience (Cucumber, Docker, CircleCI, Github Actions)
- Addressed public Github issues and presented live demos to devs in the ecosystem ([featured twice on the Proof of State Show!](#))

#### Google

Jun - Sep 2020

- Worked on the Global Networking team to develop an OpenConfig service in Go to aggregate and monitor vendor-neutral routing data, and created a client to stream events using gRPC APIs to log abnormal network activity

#### Amazon Web Services (AWS)

May-Aug 2018, 2019

- Worked on the DynamoDB team to develop a Java client library for RESTful APIs to monitor and replace stale/faulty EC2 hosts for table indexing requests (Summer 2019)
- Worked on the AWS Internet of Things (IoT) team to create Python tools to streamline the on-boarding process for devices, reducing user wait times by 60% (Summer 2018)

### Teaching | Adjunct Faculty

#### Wentworth Inst. of Tech, Boston University, University of Toronto

Sep 2016 - Sep 2023

- WIT COMP1050 - Computer Science II: Developed and delivered lectures, assignments and autograders using Github Classrooms for topics in Java (Object-Oriented Programming, data structures, GUIs, software engineering)
- BU CS526 - DS & Algos: Taught data structures, complexity analysis and how to implement algorithms in Java
- UofT CSC2107 - Compilers: Wrote automated testers and labs for graduate-level compiler assignments in C++, ANTLR, and LLVM
- UofT ECE297, CSC207, ECE244 - Software Design: Managed groups of 50+ students to build large software projects in C++/Java, held weekly code reviews, and taught students about software development tools such as git, gdb, gprof, perf, and unittest
- Received "Outstanding" ratings from UofT student course surveys (average rating of 6.87/7)

### Graduate Researcher

#### University of Toronto, Department of Computer Science

Sep 2019 - Dec 2021

- Received the IEEE ICBC '22 [Distinguished Paper Award](#) for improving authenticated storage performance and benchmarking transaction execution throughput for a new multi-layered Merkle-Patricia structure in EVM systems (*Master Thesis*)
- Developed performance benchmarks for Ethereum clients to evaluate a run-time smart contract validation tool (*ACM PLDI '20*)
- Competed and won \$1000+ in awards at MLH hackathons including UofT, Dartmouth, CU Boulder, Ryerson ([devpost.com/ajchoi](#))

## Education

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### University of Toronto

#### Master (MSc) in Computer Science

Dec 2021

Thesis: *LMPTs: Eliminating Storage Bottlenecks for Processing Blockchain Transactions*

Advisor: *Fan Long*

#### Bachelor (BAsC) in Computer Engineering with Honours

May 2019