Andrew Jemin Choi

⚑ *Canadian Citizen*   ⌂ *USA Permanent Resident*

✉ by.andrewchoi@gmail.com | ⌨ andrewjeminchoi | ▣ ajchoi

Experience

Algorand *Boston, MA*
SOFTWARE ENGINEER (⌨ ALGOCHOI) *Jun 2021 - Present*

- Worked on open-sourced consensus protocols, compilers, tools, and infrastructure in Go for a $10B market cap blockchain startup (⌨ go-algorand), founded by Turing Award cryptographer Silvio Micali
- Designed and implemented parts of the AVM to allow safer & better programmability and interoperability for smart contracts
- Developed features, integrated Cucumber tests, and maintained infrastructure in CircleCI for the Algorand Python/JS SDK
- Introduced new AVM 1.1+ features (recursive inner contract calls) for the Algorand database indexer and Chrome Web debugger

University of Toronto *Toronto, ON*
RESEARCH STUDENT, BLOCKCHAIN LAB *Sep 2019 - Dec 2021*

- Researched novel methods to improve authenticated storage performance and test transaction execution throughput for a new multi-layered Merkle-Patricia structure in EVM-compatible systems *(to appear in ICBC 2022)*
- Developed performance benchmarks for Ethereum clients to evaluate a run-time smart contract validation tool *(PLDI 2020)*

University of Toronto *Toronto, ON*
TEACHING ASSISTANT *Sep 2016 - May 2021*

- Developed and wrote automated testers for graduate compilers assignments in C++, ANTLR, and LLVM (CSC488 - Compilers)
- Managed groups of 50+ students to build large software projects in C++/Java, held weekly code reviews, and taught students about various software development tools such as git, gdb, unit testing, and profiling (ECE297, CSC207 - Software Design)
- Received "Outstanding" TA ratings from course surveys, with an average rating of 6.87/7; TA'ed 8 Computer Engineering courses

Google *Remote (Sunnyvale, CA)*
SOFTWARE ENGINEERING INTERN *Jun - Sep 2020*

- Worked on a Software Defined Networking (SDN) project to develop an internal OpenConfig service in Go to aggregate and monitor vendor-neutral routing data
- Created a client that asynchronously streams events from the service using gNMI/gRPC APIs to log abnormal network activity

Amazon Web Services (AWS) *Seattle, WA*
SOFTWARE DEVELOPMENT ENGINEER INTERN *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)

Education

University of Toronto
MASTER (M.SC.) IN COMPUTER SCIENCE *Dec 2021*
Thesis: *LMPTs: Eliminating Storage Bottlenecks for Processing Blockchain Transactions*
BACHELOR (B.A.SC.) IN COMPUTER ENGINEERING WITH HONOURS *May 2019*

Projects

MLH Hackathons [devpost: ajchoi]
PYTHON, FLASK, SOLIDITY, REACT NATIVE, REDIS, CASSANDRA, FIRESTORE, GCP

- Received $1000+ in awards as a competitor at collegiate hackathons (UofT, Dartmouth, CU Boulder, Ryerson), building projects addressing social issues ranging from tackling social anxiety to minimizing food waste in local communities
- Mentored students in ideating and implementing technical solutions for school/community hackathons