

# Andrew Jemin Choi

🇨🇦 Canadian Citizen 🇺🇸 USA Permanent Resident

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## Experience

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### Software Engineer

#### Tulip

Jan 2023 - Present

- Working on the Apps team to create extensible low-code dev platforms and improve programmability for front-line operations, and developing Tulip's full stack main app editor and player using **Go, Typescript, React, and MongoDB**

#### Algorand (📧 algochoi)

Jun 2021 - Nov 2023

- Joined as an early engineer and worked on open-sourced consensus protocols, compilers, tools, and infrastructure in **Go** for a \$1Bn+ market cap blockchain (📧 go-algorand), founded by Turing Award MIT cryptographer Silvio Micali
- Worked on the AVM (smart contract assembler) and PyTeal (high level contract language) to allow safer and better programmability for Web3 apps
- Implemented **highly requested algod REST endpoints** 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 **\$100K+** cost savings in CI and improved developer experience (**Cucumber, Docker, CircleCI, Github Actions**)
- Received prizes at internal hackathons for working on low-code smart contract editors and one-click app deployment solutions
- Addressed public Github issues and presented live demos to devs in the ecosystem (**featured twice on the Proof of State Show!**)

### CS Research

#### University of Toronto, Software Engineering & Blockchain Lab

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-based systems (*Master Thesis*)
- Developed performance benchmarks for Ethereum clients to evaluate Solythesis, a novel run-time smart contract validation tool (**AWS, Rust, Python, Solidity**) (*ACM PLDI '20*)
- Competed and won \$1000+ in awards at MLH hackathons including UofT, Dartmouth, CU Boulder, Ryerson (*devpost.com/ajchoi*)

### Software Engineering Intern

#### 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 to stream events using gRPC APIs to log abnormal network activity (**Go, gRPC**)

#### Amazon Web Services (AWS)

May-Aug 2018, 2019

- Worked on the DynamoDB team to develop a **Java** client library for REST APIs to monitor and replace stale/faulty EC2 hosts for table indexing requests and on the AWS Internet of Things (IoT Core) team to create **Python** tools for on-boarding new devices

### Adjunct Faculty | Teaching

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

Sep 2016 - Sep 2023

- WIT - CS II: Designed and delivered lectures, assignments and autograders in Java (OOP, GUIs, software engineering)
- BU CS526 - DS & Algos: Taught data structures, complexity analysis and algorithms in Java
- UofT CSC2107 - Compilers: Wrote automated testers and labs for graduate-level compiler assignments in C++, ANTLR, and LLVM
- Received "Outstanding" ratings from UofT course surveys (average rating of 6.87/7) and BU course surveys (4.9/5)

## Education

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### University of Toronto

#### Master (MSc) in Computer Science

Dec 2021

Advisor: Fan Long

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

May 2019