UBC Science Co-op
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Akira Tong

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Education

University of British Columbia — Vancouver, BC
Bachelor of Computer Science and Business — *Exp. Grad: May 2025*

- GPA: 4.33/4.33, ranked 2 with a 32-credit courseload in a class of over 700 students in the most recent school year
- Relevant Coursework: Models of Computation (98%), Software Construction (94%), Computer Systems and Architecture (95%), Linear Algebra (99%)

Technical Skills

Languages/Frameworks: Python, Java, C, C++, JavaScript, React, Next.js, Flask, Spring, Tensorflow, Tailwind CSS
Developer Tools: Git, Firebase, Google Cloud Platform, AWS, Microsoft Azure, Docker, Figma

Experience

Research Intern (NSERC USRA) — Feb. 2023 – Present
UBC ReSeSS Research Lab — *Vancouver, BC*

- Proposed a static analysis tool (MISTA) that improves vulnerability detection by 30% for Java Spring applications by integrating state-of-the-art program analysis frameworks (FlowDroid, Jasmine)
- Generated test-suite of 6 manual and real-world applications by constructing a systematic methodology for searching and injecting vulnerabilities into Spring applications
- Initiated the development and evaluation of MISTA as first author to prepare a paper submission for the International Symposium on Software Testing and Analysis (ISSTA) '24

Developer - Software Product Sprint — May 2022 – Aug 2022
Google — *Remote*

- Spearheaded UI/UX Design and the front-end of a web app for comparing prices of user-input shopping list items with a team of three other developers
- Implemented real-time commenting and pagination functionalities using Java servlets and Google Cloud Datastore
- Decreased webpage loading times by 50% using lazy loading in Next.js when comparing multiple items

Web Developer — Mar. 2022 – Present
UBC Blockchain Club — *Vancouver, BC*

- Increased website visitors by 150% using search engine optimization (SEO) and refactoring the website using Next.js and TailwindCSS
- Increase event page click-rate by 40% by deploying feature to embed event recordings using the iFrame API
- Prepared technical workshops introducing topics like Solidity, gas-optimization contracts, full-stack blockchain development, and smart contract security

Projects

Presently — 2022
Python, Express.js, Node.js, React, Firebase

- Used Python (with OpenCV and Mediapipe), Express.js, Node.js (with Azure Video Indexer), React, and Firebase to build a web app that gives feedback on users' emotions, sentiments, and eye contact to assist with virtual interview practice
- Developed in a team of four at nwHacks within twenty-four hours and won out of 150+ teams and 600+ participants

Monte Carlo Option Pricer — 2023
Python, MatPlotLib, Pandas, Numpy

- Designed and programmed a custom option pricing model using the Monte Carlo simulation method with the use of antithetic variates to reduce variance and improve accuracy by 25%
- Conducted extensive testing and validation of the model against a custom benchmark built using an artificial European options dataset