

Nicholas Fong

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EDUCATION

University of British Columbia

Combined Major in Business and Computer Science

Vancouver, B.C.

Expected Graduation May 2026

- **Key Courses:** Software Construction, Introduction to Relational Databases, Basic Algorithms and Data Structures, Introduction to Computer Systems, Business Statistics, Introduction to Software Engineering

EXPERIENCE

Data Engineer Co-op

Royal Bank of Canada

September 2025 - Present

Toronto, ON

- Reduced testing time by **75%** by developing a Python-based testing framework for Airflow- and Spark-orchestrated ETL pipelines, enabling engineers to test locally instead of relying on non-compliant Jupyter workflows
- Integrated the framework into a shared common library used by **20+ teams**, driving organization-wide adoption and standardizing data testing practices across multiple DAG pipelines
- Built a modular testing architecture using Pytest and monkey patching to mock external dependencies (Trino, mainframe systems, and APIs), allowing isolated step-by-step ETL validation
- Improved compliance and CI/CD readiness by introducing automated data governance checks and enforcing reproducible, auditable ETL tests within the deployment pipeline

QA Automation Engineer Co-op

Royal Bank of Canada

January 2025 - August 2025

Vancouver, B.C.

- Accelerated regression testing by **87%** through architecting parallel **Playwright** framework with Docker orchestration and Allure reporting, replacing legacy sequential framework
- Democratized test automation through keyword-driven framework POC, empowering non-technical QA team members to build automated tests using natural language keywords, increasing team velocity by **250%**
- Improved system reliability and cut manual intervention by **60%** by migrating legacy test scripts to **Apache Airflow** to automate backend workflows
- Reduced testing cycles by **70%** and increased defect detection by **45%** by engineering end-to-end Python/Selenium automation suites across database, API, and UI layers

Software Engineer Intern

Binggrae

June 2023 – January 2024

Vancouver, B.C.

- Achieved cost saving of **20%** by implementing an analytics dashboard to inform optimization strategies across departments using **Socket.io**, **Recharts**, and **Node.js**
- Addressed security concerns by encrypting and salting user information for a digital marketing campaign, ensuring robust data protection and compliance with privacy standards
- Improved initial page load times by **30%** by implementing lazy loading and code-splitting
- Integrated SEO best practices into the website's structure, contributing to improved search engine visibility and a **40%** increase in organic traffic

PROJECTS

Narrify | [Github](#) | [Python](#), [FastAPI](#), [Coqui TTS](#), [ffmpeg](#), [Docker](#), [APScheduler](#), [SQLite](#)

September 2025 – Present

- Built an automated pipeline to ingest Reddit stories, generate voice-cloned narration, render videos with burned-in captions, and produce YouTube-optimized metadata
- Implemented voice-clone inference (Coqui XTTS v2) with automated reference-audio preprocessing, chunked generation, and post-processing for high-quality speaker matching
- Developed FastAPI endpoints and APScheduler ingestion workflows; designed containerizable generator processes for horizontal scaling and migration to distributed workers

FitFlow AI | [Github](#) | [React](#), [Golang](#), [PostgreSQL](#), [Docker](#), [OpenAI API](#), [MediaPipe](#)

October 2023 – January 2024

- Created a fitness app using React and Go featuring health tracking, pose-based coaching, and **OpenAI API** integration for personalized recipes, improving user experience and promoting holistic wellness
- Applied **MediaPipe Pose Estimation** computer vision framework to detect and correct improper exercise form, enhancing user safety and reducing the risk of injuries during workouts
- Integrated OpenAI API for personalized recipe recommendations, using prompt engineering to tailor suggestions and ensuring safety by implementing content moderation for dietary restrictions

TECHNICAL SKILLS

Languages: Java, C, C++, JavaScript, TypeScript, HTML5, CSS, R, Python, SQL, PHP

Frameworks: React, Express.js, MongoDB, Tailwind, Go, MySQL, PostgreSQL, Redux, Node.js, AWS, Next.js

Developer Tools: Git, Docker, Visual Studio Code, IntelliJ, WordPress, JIRA, Azure, Kanban, Waterfall