

# Nathanael Yao

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## EXPERIENCE

### TELUS

Toronto, Ontario

*Research Intern (Mitacs Funded)*

*May 2024 – December 2024*

- Collaborated with TELUS engineers to develop an inline code documentation generation tool using GenAI.
- Used Tree-sitter and Python to parse and extract code elements, enabling support across multiple languages.
- Designed prompt templates using Jinja2, and used OpenAI and TELUS GenAI APIs to generate documentation.
- Integrated the tool into a GitLab CI/CD pipeline, automating documentation generation on merge request events.
- Explored LLM-based generation of goal models from user given goals and a pool of defined basic actions.
- Paired basic actions with example unit tests to enable example-driven unit test generation to support TDD.

### VisaPlace

Toronto, Ontario

*Software Engineer*

*September 2021 – January 2023*

- Developed a chatbot that evaluates immigration eligibility using the Botpress API, ReactJS and JavaScript.
- Created decision tables using the Gandalf API and AngularJS to score users based on their responses.
- Provided personalized feedback and product recommendations for high-scoring users on a results page.
- Integrated the chatbot with Salesforce, sending user data and querying records with SOQL.
- Built an agent-facing Salesforce widget using Lightning Web Components to enable human-in-the-loop support.
- Used Apex to dynamically display data for the current user in the background, streamlining agent workflows.
- Leveraged PHP, CSS, and JavaScript to build reusable and configurable Elementor Widgets for WordPress.

### Mesh AI

Kingston, Ontario

*Software Engineer Intern*

*March 2021 – August 2021*

- Contributed to the development of a Home Health Care product for physician appointment scheduling.
- Designed and developed reusable Vue.js components and used Node.js for the backend.
- Collected feedback from regular meetings with physicians and iterated designs and features for improved UX.
- Assisted in migrating from Firebase to AWS Amplify to ensure HIPAA compliance.
- Configured AWS AppSync GraphQL schema with authorization rules to enforce team-level access control.

## EDUCATION

### Queen's University

Kingston, Ontario

*Master of Science, Computer Science*

*September 2023 – May 2025*

- CGPA: 4.24/4.30. | Research Assistant in the MASE lab | Supervised by Dr. Juergen Dingel.
- Member of Kaloom-TELUS industrial research chair in DevOps.
- Graduate teaching assistant for Software Requirements, Formal Methods and Programming Language Processors.

### Queen's University

Kingston, Ontario

*Bachelor of Computing, Honors, Specialization in Software Design*

*September 2019 – April 2023*

- CGPA: 3.92/4.30. | Education Director at Queen's Web Development club. | Junior Android Developer at Betalab.

## TECHNICAL SKILLS

**Languages:** Java, Python, C++, JavaScript, TypeScript, HTML/CSS, PHP, Apex, SQL, SOQL, GraphQL, Bash

**Frameworks & Libraries:** Next.js, React, React Native, Angular, Vue.js, Lightning Web Components, OpenAI

**Cloud & Storage:** AWS Amplify, Amazon S3, Amazon RDS (PostgreSQL), AWS Appsync, Firebase

**DevOps & Tools:** GitLab CI/CD, Docker, Node.js, Android SDK, RESTful APIs, Unix/Linux, TDD, Jira, Bitbucket

**Fluent in:** English, French, Mandarin Chinese

## PROJECTS

**SEC Filings App** | *React Native/Expo, TypeScript, SQLite, Cheerio, REST APIs*

[View Project](#)

- Developed a mobile app to visualize company financial trends and quarterly 13F filings from institutions.
- Used the SEC EDGAR API and Cheerio to fetch data and used SQLite for local storage to reduce API calls.
- Designed and built reusable components with React Native and TypeScript.

**Train-e** | *Next.js, TypeScript, GraphQL, Amazon S3, Prisma, Amazon RDS (PostgreSQL)*

- Contributed to the development of an e-training website for an insurance client using Next.js and TypeScript.
- Designed GraphQL APIs with queries and mutations and used Prisma to connect with PostgreSQL database.
- Used Amazon S3 for logo image storage, enabling admins to easily upload and display custom branding.