Nathanael Yao

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EXPERIENCE

TELUS Toronto, Ontario
Research Intern (Mitacs Funded) *May 2024 – December 2024*
- Developed an automated inline code documentation tool using pre-trained language models in collaboration with TELUS engineers.
- 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.

VisaPlace Toronto, Ontario
Software Engineer *September 2021 – January 2023*
- Developed a chatbot that evaluates immigration eligibility using the Botpress API, ReactJS and JavaScript.
- Sent user information to Salesforce and queried data using SOQL.
- Built an agent-facing Salesforce widget using Lightning Web Components to enable human-in-the-loop support.
- Used Apex to dynamically display real-time data for the current user, streamlining agent workflows.
- Created decision tables using the Gandalf API and AngularJS to score users based on their responses, delivering personalized feedback and product recommendations for high-scoring users on a results page.
- Leveraged PHP, CSS, and JavaScript to build reusable 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.
- Configured GraphQL schema and implemented role-based authorization for different users.
- Assisted in migrating cloud storage from Firebase to AWS Amplify to ensure HIPAA compliance.

TECHNICAL SKILLS

Languages: Java, Python, C++, JavaScript, TypeScript, HTML/CSS, PHP, Apex, SQL, SOQL, GraphQL, Bash, Art
Frameworks & Libraries: Next.js, React, React Native (Expo), Angular, Vue.js, Lightning Web Components
Cloud & Storage: AWS Amplify, Amazon S3, Firebase
DevOps & Tools: GitLab CI/CD, Bitbucket, Node.js, Docker, Android SDK, WordPress, RESTful APIs, Unix/Linux
Fluent in: English, French, Mandarin Chinese

EDUCATION

Queen's University Kingston, Ontario
Master of Science, Computer Science *September 2023 – April 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.
- Applications of Generative AI in software engineering tasks to simplify the development and maintenance of APIs.
- Graduate teaching assistant for Software Requirements, Formal Methods and Program 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.

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.
- Fetched SEC data using the SEC EDGAR API and Cheerio 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*
- Contributed to the development of an e-training website for an insurance client using Next.js and TypeScript.
- Designed and implemented the API using GraphQL and handled queries and mutations.
- Used Amazon S3 for logo image storage, enabling admins to easily upload and display custom branding.