Brielle Nguyen

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EDUCATION

Western University — B.Sc. Computer Science (GPA: 3.8) 2025
Ivey Business School, Western University - *Honours Business Administration (HBA)*
- **TD Data Analytics Scholar | Ivey Scholar | SheHacks+ 7: General Motors Hackathon Winner (2023)**

Courses: Operating System, Machine Learning, Data Structures, Computer Architecture, Parallel Programming, Compilers, System Programming

WORK EXPERIENCE

S&P Global, Toronto, ON, Canada July 2024 – October 2024
Software Engineer Intern
- Redesign the data ingestion pipelines for the **Credit Estimate API**, migrating from a **monolithic Java service** to **Go-based microservices** on **Kubernetes**, which improved system reliability by 30% and allowed independent scaling of issuer-level components used by 50K+ clients.
- Built and deployed **TensorFlow** models for credit default risk prediction, integrating **Python-based ML** inference into the backend to personalize credit score outputs and reduce average API query latency by 20%.
- **Refactored the internal monitoring dashboard** for Credit Estimate using **React and Node.js,** improving page responsiveness by 25% and reducing initial load times by 15%, enabling analysts to view real-time risk deltas faster.
- Implemented **infrastructure-as-code (IaC)** for development and staging environments using **Terraform and Docker**, and refactored **Jenkins CI/CD pipelines** to automate environment-specific deployments, reducing manual config errors and improving delivery velocity by 50%.

Hydro One, Toronto, ON, Canada June 2024 – July 2024
Technical Analyst Intern, Digital Transformation
- Authored **technical design specs** and **API interface** documentation for **two internal microservices** used to route customer support requests and manage queue state, improving ticket resolution workflows and operational throughput by 25%.
- Contributed to the **backend architecture** of **a cloud-based digital call center system**, collaborating with Accenture & Capgemini to define service migration strategies to AWS—enhancing system uptime and reducing client issue resolution time by 20%.

Appen AI, Toronto, ON, Canada June 2023 – August 2023
AI Infrastructure Intern
- Collaborated on the **infrastructure** behind Appen's RLHF (Reinforcement Learning from Human Feedback) platform**,** supporting **GPT-based fine-tuning** for enterprise clients in the finance and retail domains.
- Designed and authored **PRDs** for internal tools used by **100+ labelers**, improving **annotation efficiency by 30%** and reducing feedback cycle time.
- Refactored **Python-based data pipeline** logic to batch and queue training samples for distributed ML model ingestion, increasing throughput by 20%.
- Partnered with backend engineers to integrate **structured logging (Loguru)** and **Prometheus metrics** into FastAPI-based **task-routing and labeling job APIs**, which powered human feedback loops across 1M+ RLHF datapoints/month—reducing debugging time by 40%.

TECHNICAL PROJECTS

CineMatch – AI Movie Guide *(Github link)* 2025
SwiftUI, FastAPI, Python, scikit-learn, OpenAI, SQLite, PostgreSQL, SQLAlchemy, REST APIs, Docker, Xcode, TMDb API
- Designed and implemented a modular backend in **FastAPI with RESTful endpoints**, leveraging **SQLAlchemy and PostgreSQL** to persist user ratings, mood tags, and rankings for real-time personalization across the native **iOS SwiftUI** client.
- Developed an AI-driven mood-to-genre mapping engine using **embedding-based similarity** and **label classification**; mapped inputs like "heartbreak" or "thrilling" to weighted genre/tag vectors for context-aware content filtering.
- Built an **NLP pipeline** to parse natural language voice commands (e.g., "Show me a romantic comedy under 90 minutes"), extracting entities and constraints via regex + semantic parsing, and dynamically converting them to filterable backend parameters.

Payment Processing System *(Github link)* 2024
React, Node.js, Java, Spring Boot, SQL, MongoDB, REST APIs, AWS, Docker, Jenkins, Python, AJAX, JavaScript, WebSockets
- **Built a backend system using Node.js and Spring Boot** powering the checkout and transaction flows for a simulated e-commerce platform, supporting credit, debit, and bank transfer payments with dual-database architecture (SQL for structured data; MongoDB for unstructured data).
- **Optimized backend performance** to reduce API response times by 20% and enhancing scalability via AWS load-balancing to ensure fault-tolerance for concurrent users.

Crypto Coins Trading System 2022
Java, JavaScript, HTML, CSS, MongoDB, React, Script
- Developed a **cryptocurrency trading system** using Java and React, implementing **RESTful APIs** in Spring Boot for real-time data retrieval-reducing integration time by 30% and boosting transaction efficiency by 20%.
- Built analytics modules using **JavaScript and MongoDB** that enabled traders to customize strategies and visualize market trends, enhancing trading insights and decision-making.

SKILLS

Programming: Python, Java, JavaScript (ES6+), C/C++, SQL, R, HTML, CSS, React.js, Node.js, Express.js, Redux/Immutable, TypeScript, Django.
Core Competencies: Backend Architecture, Distributed Systems, API Design, iOS (SwiftUI), Full-Stack, System Scalability, Cloud Infrastructure, Performance Optimization, Data Modeling.
Frameworks: SwiftUI, FastAPI, Spring Boot, React, Node.js, Express, SQLAlchemy
Tools: Docker, Jenkins, Git/GitHub, AWS, Jira, Confluence, Slack, CI/CD Pipelines, Hadoop, Apache Spark, PowerBI, Tableau, Excel, Figma, Adobe.