Nicholas Lam

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Education

Honors in Computer Science (HBsc.), Honors in Business Administration (HBA) London, ON, Canada
Western University, Ivey Business School *September 2020 - April 2025*

- **GPA**: 3.7/4.0 ; Western Scholarship of Distinction: $2500, Dean's Honor List
- **Leadership**: Vice President of Projects Portfolio Western Founders Network Club, WesternAI Project Director
- **Awards**: DeltaHacksX Hackathon Winner, MapleHacks Hackathon Winner, Business 2257 Robert G. Siskind Entrepreneurial Award (1st/250), Simplii Financial Case Competition 1st Place, Relay Financial Start-up Advisory Program 1st Place

Technical Skills

Languages: C++, C, Python, Java, TypeScript/JavaScript, SQL, HTML & CSS, Docker, FastAPI, Next.js
Skills: React, Node.js, Express.js, TensorFlow, PostgreSQL, MongoDB, Flask, Socket.io, Firebase, AWS, Azure, Databricks

Experience

RBC Amplify Toronto, ON, Canada
Software Engineer Intern *May 2024 - Present*

- Revamped RBC's Insurance Application Process to leverage **machine learning** predictive modeling reducing **client drop off rates by 10%** and increasing **straight-through processing rate by 40%** improving client retention and experience
- Engineered and deployed a robust, multilayered **Microservice API** with an orchestration layer to optimize performance, ensuring isolation for high availability and fault tolerance using **FastAPI and Docker** containerization and deployment
- Developed and implemented comprehensive **unit tests** for reliability, robustness, and scalability of each microservice
- Project was chosen to go forward for a **provisional patent** and is currently being implemented into the bank

Lobby IQ London, ON, Canada
Software Engineer Intern *May 2024 - Present*

- Created an **ETL Pipeline** and multiple web-scraping algorithms to source the House of Commons and Senate data into a Microsoft **Azure Database** and Blob Storage leveraging Python, Beautiful Soup 4, Selenium, and Git
- **Automated the ETL pipeline** to run daily using scheduled Azure Functions, ensuring timely and accurate data updates
- Developed **comprehensive unit tests** for the web-scraper to ensure the pipeline collected structured and reliable data

Labatt Brewing Company Toronto, ON, Canada
Software Engineer Intern *May 2023 - September 2023*

- Conducted and presented analysis of Procure to Pay (PTP) Freight Manual Costing Processes and suggested **end-to-end automation tool** to **reduce manual workload for auto-costing processes by 100%** and increase total accuracy
- Replaced manual data cleaning and data reporting processes for all carriers across North America with an **automated data processing program from scratch**, removing human error using Python, Pandas, and Microsoft Excel, leading to a **50% reduction** of manual data reporting process time (10/min per error to none) with **100% lane data costing accuracy**
- Selected and led a **Python workshop** for the entire **60-person Business Transformation Services team**

Savi Finance Toronto, ON, Canada
Software Engineer Intern *Jan 2023 – April 2023*

- Transformed **Python Lambda functions into in-house RPC endpoints**, enabling the front end portion of the financial budgeting app to make financial forecasting calls directly to the API instead of relying on AWS Lambda functions
- Wrote **over 1500 lines of JEST tests** for each API endpoint and JSDOC to ensure code functionality and performance

Projects

coTA - DeltaHacksX Winner | *React, FastAPI, Python, WebSocket, Python-PPTX, Cohere RAG Model*

- Educational Media Platform that converts lecture material documents into short-form TikTok-like content
- Created a dual RESTful API and WebSocket backend with FastAPI to extract text from PowerPoint files, and feed them to Cohere's Retrieval Augmentation Generation (RAG) model that transforms them into summaries displayed on the front-end
- Dynamically fed data to the front-end through WebSockets reducing content generation time from 2 minutes to 15 seconds

__init__() | *React, Node.js, FastAPI, Socket.io, Firebase, OpenAI API, Github OAuth, Express*

- Full-stack application turning text and voice prompts into HTML and CSS rendered, one-click to deploy websites
- Streamed OpenAI output to the front-end through websockets for code generation and webpage rendering in real-time
- Leveraged websockets to allow for project collaboration, shared prompting, and live code generation and rendering

RoomFinder | *React, Express.js, PostgreSQL, C++, Arduino*

- Created a full-stack application helping students find available/unoccupied study rooms in their residences
- Arduino light sensors communicate current room status with RESTful backend displaying information on React front-end
- Students can see the probability of rooms being available in the next 24 hours, as data is stored in PostgreSQL database

Interests

Speed Typing, Hockey (13+ years competitive) and Basketball, Work Station Setups, Chess (1400 Rapid)