Oscar Yan Yu

CANADIAN CITIZEN (J-1, TN VISA ELIGIBLE)
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Education

Honors Computer Science, Honors Business Administration — Expected: May 2025
Western University, Ivey Business School, HKUST (Exchange) — *London, ON*

- **Scholarships/Awards**: Western Scholarship of Distinction, Dean's Honour List (2020-2024)
  1st place Western University team @ International Collegiate Programming Contest (ICPC) NA Qualifiers (2021, 2022)
- **Relevant Courses**: Data Structures and Algorithms, Distributed Systems, Object-Oriented Design and Analysis, Operating Systems, Databases, Computer Networks, Computer Architecture, Machine Learning

Skills

Languages: Python, Java, C++, C, C#, Typescript/Javascript, SQL, HTML/CSS
Frameworks/Libraries: Node.js, Next.js, React, Flask, Qt, Spring Boot, Pandas, NumPy, TensorFlow, Keras
Tools: Git, Unix/Linux, Docker, Azure, AWS, Apache Spark, Databricks, Redis, MongoDB, GraphQL, gRPC

Experience

Mark43 — June 2024 – Present
Software Engineering Intern — *New York, NY*

- Developed updated backend data collection and validation modules, database schemas, and custom data classes using Java and MySQL, enabling increased detail for tenant-specific document querying and transformation features.
- Designed and implemented new application interfaces for client-configurable reporting period selections using TypeScript and React, ensuring compliance with new state and federal guidelines for clients in previously unsupported reporting zones.

CIBC — May 2023 – Aug. 2023
Software Developer Intern — *Toronto, ON*

- Architected department-wide data archival system and implemented data pipelines using Python and Azure Data Factory to automate data compression and archival, reducing live archive size by 80% and saving over $3000/month.
- Optimized global config management using Azure Databricks to consolidate configuration files into a single source of truth, eliminating version mismatches and reducing pipeline development/maintenance time by up to 90%.
- Modularized C# API templates, enabling discretionary querying and eliminating redundant API calls for business teams.

Bank of Montreal — May 2022 – Aug. 2022
Risk Analyst Intern — *Toronto, ON*

- Created dashboards using Python and PowerBI, enabling detailed counterparty risk tracking for 50+ market risk analysts.
- Automated daily FX report generation from Oracle DB via Python and Chron scripts, reducing daily data latency by 90%.
- Built data pipelines between database systems and internal reporting/analytics using Python to streamline complex SQL querying across 10+ tables and 6 million rows, decreasing time spent on manual querying by 50%.

Leadership

Western AI, Project Manager — Sept. 2022 – Apr. 2023

- Led weekly meetings and mentored team of 5 to develop a convolutional neural network using Python and TensorFlow.
- Developed 12-million parameter CNN model and tuned hyperparameters to classify 500+ bird species with 70% accuracy.

Projects

Western Rank — Next.js, TypeScript, Python, SQL

- Built a course review platform for over 30 000+ students @ Western University and affiliate colleges.
- Designed PostgreSQL DB and Next.js REST API endpoints for reviews and course data hosted on Amazon RDS (AWS).
- Scraped description and prerequisites of 6000+ courses to Postgres DB using Beautiful Soup, Psychopg2, and Pandas.
- Integrated 2800+ RateMyProfessor reviews and ratings into course reviews using GraphQL API and TypeScript.

Game Boy ++ — C++, SDL2

- Emulated the Nintendo Game Boy architecture in C++ for Raspberry Pi by reverse-engineering hardware documentation.
- Implemented complete CPU instruction set, registers, memory management system, and graphics emulation using SDL2.
- Increased code coverage to 80% by writing unit tests using Catch2 and test ROMs to validate Game Boy functionality.

CPR Redis — Python, gRPC, Redis

- Designed a low-latency, consistent, distributed in-memory database solution for high performance caching applications.
- Implemented the RAFT election algorithm using Python and gRPC calls to synchronize independent Redis instances.
- Developed JSON-based persistent logging solution to restore/recover Redis instances from scratch on launch or restart.