Justin Du

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Education

University of Toronto, St. George   2023 - 2028
HBSc. Computer Science, Co-Op Program (ASIP) — GPA: 3.94 / 4.00 (Dean's List Scholar)   *Toronto, ON*

Technical Skills

Languages: Python, JavaScript/TypeScript, JSX/TSX, MySQL, Java, HTML/CSS, MIPS Assembly, Bash, R, C/C++
Frameworks & Platforms: React.js, React Native, Angular, Flask, Expo, FastAPI, PyTest, JUnit, SageMaker
Development Tools: JIRA, Confluence, Azure, Firebase, Hugging Face, GitHub, OpenShift, Docker, PostgreSQL
Libraries: matplotlib, sklearn, pandas, transformers, opencv, pytorch, openai, requests, numpy

Experience

Royal Bank of Canada (RBC)   May 2025 - present
Data Scientist — Co-Op   *Toronto, ON*

- Completed design & deployment of dictation service in **first month**, supporting **75,000+** employees worldwide.
- Designed new finetuning backbone for a prompt autocompletion service using ingestion of 200,000+ bank policies.
- Led migration of RAG FAQ tool from Nova Scotia ERM team to standard architecture with **FastAPI & Postgres**.
- Standardized QnA flow by replacing local caches with **vector search**; upgraded reasoning capabilities with **CoT**.

U of T Machine Intelligence Student Team — *Website*   Sep 2024 – present

Director, Industry Collaborations   Jun 2025 – present

- Project management in collaboration with **Lawbrokr Inc.** to solve product challenges and innovation ventures.
- Organizing school-wide student recruitment for project lead and ML developer roles to fill **75+** open positions.
- Responsible for directing weekly work sessions with project teams and client touchpoints over 8-month timeline.

Machine Learning Developer, Knockri Inc.— *Website*   Jun 2025 – present

- Improved train dataset labeling efficiency by **over 500%** with LLM-as-a-Judge and **prompt engineering** flow.
- **Eliminated data collection costs** by synthesizing training data with finetuned LLM for transcript generation.

Projects

Stack: Course Multimedia Indexer — *Github*   May 2024 - Mar 2025

- Outperformed SOTA models by **24%** for the *SPaSe* benchmark dataset with a new finetuned Mask R-CNN model.
- Designed **React Native** app with Expo for search and automatic compilation and indexing of course multimedia.

TapIt: NFC-Enabled Social Media Sharing (Hack the North 2024) — *Github*   Sep 2024

- Designed tooling for social media networking & sharing with `Ndef`-enabled NFC tags via react-native-nfc-manager.
- Produced **Expo + React Native** mobile app in under 1 day, enabling quick profile transfer from phones to tags.

Interrsect: LLM Notes Summarizer — *Website* — *Github*   Sep 2022 - May 2023

- Developed finetuned BART model for study note summarization sourced from aggregated work taken by students.
- Achieved a top **ROUGE-2** score of **15.13**, expressing strong bullet point generation (prior to ChatGPT release).
- Performed live testing in a high school classroom on **React.js** web app with Firebase and Hugging Face backbone.

Awards

Youth Science Canada   2021, 2023
2-time bronze medalist at the **Canada-Wide Science Fair** and top **0.1%** of projects in the country.