

Justin Du

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Education

University of Toronto, St. George

2023 - 2027

HBSc. Computer Science, Co-Op Program (ASIP) — GPA: 3.94 / 4.00 (Dean's List Scholar)

Toronto, Ontario

Experience

Full Stack / ML Developer

Sep. 2024 - present

Knockri

Toronto, ON

- Cost optimizing language models predicting candidate fit in job applications and developing CI/CD pipelines for live model deployment.
- Generated synthetic transcript dataset via iterative prompt engineering process, eliminating data collection and labeling costs.
- **Improved labeling efficiency by over 500%** by designing new unsupervised labeling process to create behavioural characteristic tags in transcripts, while meeting labeling quality criteria as outlined by the chief scientist.

Projects

Stack: Course Multimedia Indexer — 📄 Github — 🎨 Figma

May 2024 - present

- Outperformed SOTA models by **24%** for the *SPaSe* benchmark dataset with a new Mask R-CNN model designed to segment presentation slide elements (e.g. title, links, text, diagrams).
- Designing **React Native** app with Expo that automatically compiles and indexes uploaded course multimedia, providing students with centralized and efficient topic lookup when studying.

TapIt: NFC-Enabled Social Media Sharing ([Hack the North 2024](#)) — 📄 Github

Sep 2024

- Implemented the **react-native-nfc-manager** library to write social media links to any Ndef-enabled NFC tag, as well as handle data read by the device.
- Brought an **Expo - React Native** app to production in under 32 hours, enabling users to load multiple custom profiles and write to an available NFC tag.

Interrsect: LLM Notes Summarizer — 🌐 Website — 📄 Github

Sep 2022 - May 2023

- Developed BART model based on **bart-large-cnn**, finetuned on **arxiv-summarization**, to generate improved study notes using aggregated work by students.
- Achieved a **ROUGE-2** score of **15.13**, expressing **strong shortform text generation**.
- Designed **React.js** end user interface hosted on Google Firebase, with data managed through **Firestore Database** and model connected via Hugging Face Inferencing.

Heliios: Solar Panel Generation Forecaster — 📄 Github

Sep 2020 - Apr 2022

- Trained a **K-neighbors regressor** from scratch to predict, using meteorological data, power generation of solar panels **anywhere in Canada**.
- Reduced the error margin of model predictions from **10%** to **<3%** through iterative **finetuning** process with **K-fold cross validation** using **GridSearchCV**.

Awards

Youth Science Canada

2021, 2023

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

Technical Skills

Languages: Python, Java, JavaScript, MIPS Assembly, TypeScript, R, C++, HTML/CSS

Frameworks & Platforms: React.js, React Native, Flask, Expo, Material UI, PyTest, JUnit

Development Tools: Atlassian JIRA + Confluence, Microsoft Azure, Google Firebase, Hugging Face

Libraries & Misc.: matplotlib, sklearn, pandas, transformers, opencv, pytorch, Maven