

# Benjamin Mah

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## EDUCATION

### University of Toronto

*Bachelor of Applied Science in Engineering Science*

Major in Machine Intelligence with Minor in Engineering Business

Relevant Courses: Introduction to Machine Learning, Foundations of Computing, Data Structures & Algorithms, Digital Systems

Toronto, Canada

September 2021 - May 2025

## EXPERIENCE

### Cohere

*Data Analyst & AI Data Trainer*

September 2023 – Present

Toronto, ON

- Auditing machine learning data, revising errors, boosting accuracy by **15%** while optimizing data processing.
- Collaborating closely with cross-functional teams, including data engineers, to ensure data accuracy, completeness, and consistency, achieving a **98%** accuracy rate and facilitating LLM model refinement and reliability.
- Conducting comparative analysis of machine learning completions, advancing the learning rate of the models.

### Royal Bank of Canada (RBC)

*Machine Learning Engineer Intern*

May 2023 – August 2023

Toronto, ON

- Worked within the Generative AI team within RBC's Technology and Operations Innovation Labs.
- Developed a machine learning application using semantic search, parallel processing, and prompting techniques to parse, chunk, embed, match, and respond to user questions on financial libraries in both IR and EQA stages.
- Led the development of a multi-type file processing pipeline with retrieval endpoints, accelerating proof-of-concept development by **30%** through the elimination of repetitive code for future projects leveraging generative AI.
- Used Python, LangChain, Qdrant, Amazon S3, and OpenAI models to boost accuracy and efficiency by **67%**.

### FlipDoor

*Co-Founder & Principal Software Engineer*

March 2022 – April 2023

Toronto, ON

- Co-founded a startup focused on implementing a mobile application using AI algorithms to improve pairing with landlords and tenants backed by the University of Toronto Hatchery, an engineering-based startup incubator.
- Principal software engineer using MERN stack and data wrangling to build Tinder-like machine learning algorithm for the rental market, increasing client satisfaction rate by **55%** from conducted surveys and feedback from users.
- Created Figma mockups, conducted market research, and presented business pitches to potential investors with a projected yearly revenue of **\$100,000** nationwide and awarded with **\$10,000** in funding.

## PROJECTS

### Dubu Chatbot 📄 | Python, JavaScript, HTML, CSS, Flask, OpenAI API, ChromaDB

- Developed a user-friendly chatbot for small businesses, enabling PDF uploads for custom interactions.
- Engineered to support 8 unique tones, enabling over 255 tone combinations for enhanced user engagement.
- Utilized ada-002 for embedding generation, GPT-3.5 for language processing, and ChromaDB for vector storage.

### MoodPalette 📄 | Python, JavaScript, HTML, CSS, Flask, DeepFace Library

- Created an art therapy application leveraging Meta's DeepFace library for real-time facial mood analysis.
- Enhanced user interaction with image capture/retake functionality, adjustable brush sizes, and artwork saving.
- Programmed dynamic adjustments to the color palette and art prompts to reflect the user's emotional state.

### AgriAnalyzer 📄 | CircuitPython, Raspberry Pi

- Constructed a smart farming trailer designed for rural Ugandan farmers, utilizing Raspberry Pi-based systems.
- Designed to collect and process agricultural data, offering real-time farming suggestions to optimize crop yield.
- Integrated GPS, sensors, LCD displays, and joystick controls to streamline operational efficiency.

## SKILLS

<b>Languages:</b>	Python, C/C++, JavaScript, MATLAB, SystemVerilog, RISC-V/Assembly, HTML/CSS, SQL
<b>Frameworks/Tools:</b>	LangChain, Flask, PyTorch, TensorFlow, AWS, Git, VSCode, Jupyter Notebook
<b>Libraries/APIs:</b>	pandas, NumPy, Matplotlib, OpenAI, ChromaDB, Qdrant, Gradio, ROS
<b>Interests:</b>	Record Collecting, Piano, Studio Ghibli Films, Formula 1, Basketball, Taekwondo