

BENSON YAN

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EDUCATION

University of Waterloo

Bachelor of Computer Science

Waterloo, Canada

2023 – 2028

- Courses: Reinforcement Learning, Object-Oriented Programming, Algorithms, Statistics, Combinatorics, Linear Algebra

EXPERIENCE

Advanced Building Innovation Company

Software Engineer Intern

Toronto, Canada

Jan 2025 – Present

- Enabled **500+** monthly customers to purchase homes through a custom home building web application, featuring 3D home tours and automatically generated floorplans based on design combinations by mapping CAD objects to SVG format with **PostgreSQL**, **ASP.NET Core**, **Svelte**, and **Mapbox**
- Increased sales revenue up to **\$50,000** per home by implementing event sourcing architecture across **20+** endpoints to provide sales and marketing teams in-depth insights to customer preferences for each home development
- Developed an event-driven analytics platform using **Umami** to log and process customer actions, delivering invaluable customer insights to consultants and data analysts
- Collaborated with architects and structural engineers to save **10+ hours** of export time per CAD project by automating **30+** manufacturing requirements for all housing models through a CAD plugin with **C#/ .NET** and the **CADWorks API**

Lovelytics & UTMIST

Machine Learning Engineer

Virginia, USA

Sept 2024 – Present

- Engineered a distributed multi-agent system leveraging **Python**, **LangChain**, **Databricks**, and **asyncio** to overcome the output limitations of traditional LLMs and automate the generation of long-form business reports of **5000+** words
- Implemented a Retrieval Augmented Generation (**RAG**) pipeline utilizing **FAISS vector store** and **OpenAI Embeddings** to improve the accuracy of business reports and factual accuracy by **30%**
- Integrated a real-time web search agent with **DuckDuckGo** to source and verify citations, boosting report credibility

Cornerstone Realty Marketing


Summer Analyst Intern

Toronto, Canada

May 2024 – Aug 2024

- Streamlined an existing data analyzing workflow by creating a dashboard that analyzes key performance indicators across **147** Toronto Neighbourhoods with **Python**, **Streamlit**, **Plotly**, and **Matplotlib**, saving business analysts **multiple days** per project and eliminating all data entry errors
- Increased rental income potential by **10%** by designing demographic models, which optimized unit layouts and amenity choices, providing consultants further insights to perform competitive analyses of the rental market
- Delivered data-driven insights on condominium markets with **5+** comprehensive case studies, guiding investment decisions that maximized rental revenues and tenant satisfaction

PROJECTS

BetUFC |  Python, Docker, Google Cloud, scikit-learn, NumPy, TypeScript, Next.js, Flask

Oct 2024 – Dec 2024

- Developed a predictive model using **Random Forest**, and **Bayesian Statistics** to achieve over **89%** accuracy in predicting fight outcomes based on historical data from more than **7,000** UFC fights
- Improved model accuracy by **15%** by implementing data preprocessing techniques with **pandas** and **NumPy**, including handling missing values and feature scaling, and optimizing hyperparameters using **Grid Search Cross-Validation**
- Deployed the predictive model as a **microservice** using **Docker**, **Google Cloud Run**, and **Flask**, enabling real-time predictions with **REST API**

Veyesor |  OpenCV, Socket.io, WebRTC, Flask, React

Jan 2025

- Awarded 'Most Forward-Thinking Project' among **500+** participants at McHacks 12 (McGill University), securing a **\$500** prize for innovative use of **VR** and computer vision to enhance driver safety
- Developed a live panoramic video stitching application using **OpenCV** homography mappings and Gaussian blending to merge multiple iPhone camera feeds via **WebRTC** to create a 180-degree, unobstructed view of a vehicle's surroundings

TECHNICAL SKILLS

Languages: C#, TypeScript, JavaScript, Python, C++, Java, HTML, CSS, SQL, Bash

Frameworks & Tools: ASP.NET Core, Fast API, Svelte, PostgreSQL, MongoDB, Linux, Docker, Terraform, Kubernetes, Azure

Libraries: React, Express.js, NumPy, pandas, Matplotlib, Ultralytics, Drizzle ORM