

Shaun Arulanandam

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Education

University of Toronto | Major: **Electrical & Computer Engineering** | Minor: **Artificial Intelligence** Toronto, ON
Bachelor of Applied Science & Engineering, Engineering Science CGPA: 3.5+ | Admission Average: 99%

Experience

Undergraduate Finance and ML Research | King Mongkut's University of Technology Bangkok, Thailand
ESROP Global - International Research 05/2024 - 08/2024

- Researched Generative AI's ability to generate realistic, synthetic stock charts based on certain stock patterns, OHLC data and various financial indicators.
- Developed and trained a custom **TimeGAN** model for generating synthetic stock charts, achieving **91% accuracy** in pattern recognition when tested with an **XGBoost Classification Model**.
- Developed and curated datasets from the S&P 500 stock index using custom **Signal Processing (SciPy) Algorithms** and **Mathematical Formulations**.

S&P Detailing Whitby, ON
Business Founder - Mobile Car Detailing (Seasonal) 06/2023 - 09/2024

- Founded and scaled a profitable mobile car detailing business, achieving consistent **4-figure monthly revenue**.
- Oversaw all business operations, including financial planning and resource allocation, ensuring growth and profitability.
- Led a team of employees**, fostering a collaborative environment to deliver high-quality services and ensure customer satisfaction, resulting in a strong client retention rate.
- Led marketing strategies, using data analytics to boost efficiency and repeat business.

Projects

MediScan Pro 09/2023 - 10/2023

- Developed an AI-driven system using **ResNet-50** for X-ray classification of pneumonia, achieving over **80% accuracy** on test data and generating automated medical reports.
- Built a **full-stack** web application with **Flask** for backend and secure user login, enabling image uploads and real-time diagnostic feedback.
- Integrated front-end design with **HTML/CSS/JavaScript**, enhancing user experience with seamless report generation and PDF download functionality

Sentivest AI Trading Bot 08/2023 - 09/2023

- Algorithmic Trading Bot that makes automated decisions using **Python**, **Alpaca API**, and **sentiment analysis**.
- Integrated **FinBERT** machine learning model to assess sentiment of news articles and drive buy/sell decisions with 99.9% confidence thresholds.
- Designed bracket orders with automatic take-profit and stop-loss settings to minimize risk and optimize returns.
- Backtested the strategy using Yahoo Finance historical data on SPY (S&P 500 ETF), spanning 3 years, achieving a consistent pattern of profitable trades.

Investors Centre 06/2024 - 07/2024

- Developed a responsive web application with a user friendly interface using **Python**, **Flask**, **React JS**, and **Tailwind CSS**
- Implemented **LSTM** and **bi-directional LSTM** models to predict stock price movements, achieving **80%** and **76% accuracy**, respectively, demonstrating proficiency in **Machine Learning** and **Time Series Analysis**.
- Integrated **GPT-3.5 Medium API** via **Hugging Face** to build an interactive finance chatbot that delivers real-time, company-specific financial information, enhancing user engagement and providing actionable insights.

Technical Skills

Languages: Python, Java, Javascript, MATLAB, C/C++, Assembly, HTM, Verilog

Libraries and Frameworks: TensorFlow, Keras, Pandas, Flask, SciKit Learn, SciPy, Hugging Face Transformers, Matplotlib, Node.js, React, Tailwind CSS, JavaFX, SKLearn

Developer Tools: Arduino, Raspberry Pi, Fusion 360