

PROFILE

Results-driven software engineer with expertise in AI, data systems, IoT, and a strong foundation in mathematics and finance, dedicated to leveraging cutting-edge technologies for innovative, high-impact solutions in challenging environments.

EDUCATION

- International Baccalaureate Diploma

Singapore
- Overseas Family School

Aug 2020 – May 2022
- **Subjects:** HL: Computer Science, ITGS, Business Management, English A; SL: Mathematics: Analysis and Approaches, Spanish Ab Initio
- **Activities and Societies:** Leader of the Java Club and the Rocket Science Club. Participated in the Applied Engineering Club, Computer Programming Club (Python) and the Computer Linux Club for Beginners
- **Total Score: 34/45:** Sole student to take 4 higher level subjects out of a cohort of 250+ students

RELEVANT EXPERIENCE

- RevisionDojo

Singapore
- Software Engineer

Aug 2024 – Present
- **Web Scraper Development:** Built a scraper using Node.js, Axios, and Cheerio to extract GMAT and A-Level curriculum data.
- **AI Integration:** Implemented OpenAI's GPT-3.5 API to automatically generate concise subject descriptions from CSV files.
- **Data Structuring:** Organized scraped data into a structured JSON format for better content management.
- **Code Optimization:** Enhanced code performance and maintainability for scraping and description generation processes.
- BlueWave Technologies

Singapore
- Software Engineering Intern

May 2024 – Present
- **Node-RED and OpenSCAD:** Learning Node-RED and OpenSCAD for battery monitoring systems. Focused on innovative solutions for industrial backup power systems.
- CampusAI

Singapore
- Software Engineering Intern

June 2023 – April 2024
- **Developed automated Jupyter notebooks:** Created Jupyter notebooks to automate AI labs tailored for the financial services sector.
- **Utilized APIs:** Enhanced educational tools using OpenAI, Open Router, and AYP APIs.
- **Professional Development:** Engaged in continuous professional development through finance-related courses.
- **Organized Webinars:** Organized webinars to guide students in exploring careers in finance.
- GoSmack

Singapore
- Financial Analysis Intern

June 2022 – July 2022
- **Investment Support for SMEs:** Aided local SMEs affected by COVID-19 in obtaining approximately SGD 30,000 in investment from angel investors.
- **Financial Statement Automation:** Automated the company's financial statements, including computations for profit and loss accounts, profitability ratios, and revenue forecasting.
- **Pitching to Angel Investors:** Assisted the company in pitching its business concept to angel investors to acquire funds for ongoing operations.
- **Digital Marketing and Development:** Supported the firm in digital marketing, establishing a social media presence, and developing booking platforms and websites.
- Sigma.ai

Singapore
- Content Manager and Lecturer

May 2021 – May 2022
- **Teaching:** Taught machine learning fundamentals, including types of learning, regression, and activation functions.

SKILLS

- **Computer Skills:** Java, SQL, Python, HTML, CSS, R, LaTeX, Node.js, Node-RED
- **Libraries:** NumPy, TensorFlow, Keras, Sci-kit learn, PyTorch, Matplotlib, Prophet, Pandas, Plotly, Qiskit, OpenCV
- **Tools & Technologies:** AWS, Amazon S3, TCP Dump, Cisco Packet Tracer, MATLAB, Squarespace, Microsoft Office
- **Financial Skills:** Bloomberg Terminal, Profitability Ratios, Liquidity Ratios, Financial Analysis, Securities Research
- **Other Skills:** Web Scraping with Python

HONOURS AND AWARDS

- **Academic Merit Certifications:** Received for the following IB subjects: IBHL Computer Science, IBHL Information Technology in a Global Society.
- **Extended Essay Exhibition:** Certificate of Recognition from Overseas Family School - Demonstrated Excellence in the Extended Essay Exhibition.

ACADEMIC PROJECTS

- **Assembly Virtual Machine Emulator:** Initiated development of an Assembly Virtual Machine Emulator using C++ and Assembly, aimed at demonstrating proficiency in low-level systems programming and computer architecture.
- **Video-To-Text Processing:** Developed a video processing system using Google Colab, gdown, and OpenCV for frame extraction and handling. Researched video captioning models including VideoLLM-online, Vid2Seq, mPLUG-video, and VideoBLIP-OPT-2.7b. Analyzed performance metrics and cost implications of large language models like OPT-2.7B and datasets like Ego4D.
- **Image-To-Text Processing:** Developed a Jupyter Notebook for generating captions from image inputs. Researched and identified the best large language models (LLMs) tailored for image-to-caption tasks. Implemented and tested models to optimize caption accuracy and relevance. Utilized packages such as numpy, opencv-python, scikit-learn, pandas, and matplotlib to support data processing and visualization tasks.
- **Extended Essay:** Analyzed Apple's 2018 acquisition of Shazam Inc., focusing on its impact on the music streaming industry. Utilized business management and financial tools, including SWOT, profitability ratios, market share analysis, STEEPLE, and Ansoff Matrix. Employed Google Finance on Google Sheets to generate financial figures from NASDAQ for Apple and Shazam.
- **Financial and Mathematics Calculator - Java & JavaFX:** Designed a GUI using JavaFX for a versatile calculator and implemented arithmetic, financial, and statistical calculations.
- **Optimizing Plastic Bottle Design for Efficient Volume Utilization:** Used optimization to maximize volume and minimize material usage. Analyzed design variations with graphing software.

QUALIFICATIONS

- **Artificial Intelligence & Machine Learning:** AI Essentials (Intel), Introduction to Generative AI (Google Cloud), AI-Powered Chest Disease Detection (Coursera), Neural Networks and Deep Learning, Improving Deep Neural Networks, Machine Learning Specialization (DeepLearning.AI), Get Ready for Generative AI (LinkedIn)
- **Data Science & Analytics:** Understanding Basic SQL Syntax (Coursera), Clustering, Principal Component Analysis, Time Series Analysis (Great Learning), Data Analytics for Investment Management (Coursera), Using Basic Formulas and Functions in Microsoft Excel (Coursera)
- **Deep Learning & Neural Networks:** Machine Learning Specialization (DeepLearning.AI), Neural Networks and Deep Learning (DeepLearning.AI), Improving Deep Neural Networks (DeepLearning.AI), Introduction to Computer Vision (Great Learning), Image Classification with ChatGPT (Coursera)
- **Programming & Software Development:** Python Programming (Coursera), JavaScript and TypeScript Development (Self-Learning), Web Scraping with Python (Great Learning), MATLAB Onramp & App Building (MathWorks), ChatGPT 4, Introduction to Networks and Cisco Devices (Coursera), Circuits for Beginners (National University of Singapore)
- **Cloud Computing & Software Tools:** AWS S3 Basics (Coursera), Supabase for Data Management (Practical Experience), Preparation for Job Interviews (Coursera), Introduction to Microsoft Excel (Coursera), Using Typeform for Market Research (Coursera)
- **Financial Analysis & Stock Market Strategies:** Constructing Stock Market Indices (Coursera), Technical Stock Charting with R (Coursera), Valuation Techniques: WACC Valuation, Dividend Discount Model, Analyzing Apple's Stock (Bloomberg Terminal, Coursera), Markowitz Portfolio Optimization (Coursera)
- **Investment Strategies & Portfolio Management:** Seeking Investment Alpha (Coursera), Markowitz Portfolio Optimization (Coursera), Dividend Discount Model (Coursera), Financial Planning and Wealth Management (Coursera), Commercial Banking (Corporate Finance Institute)
- **Economics & Financial Engineering:** Modern Monetary Theory (Coursera), Economics of Money and Banking (Coursera), Derivatives and Risk Management (Coursera), Financial Engineering (Coursera)
- **Electronics & Semiconductor Knowledge:** Circuits for Beginners (National University of Singapore), Semiconductors for Beginners (National University of Singapore), Introduction to Networks and Cisco Devices (Coursera)