Thomas (Eddie) Hesketh

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Education

The University of Adelaide — Adelaide, Australia
Bachelor of Engineering (Honours)(Electrical and Electronic) - 6.857 GPA — *2024 – 2027*

The University of Adelaide — Adelaide, Australia
Bachelor of Mathematical and Computer Sciences (Computer Science Major) - 6.857 GPA — *2024 – 2027*

Scotch College Adelaide — Adelaide, Australia
High School Diploma - Raw ATAR of 99.15 — *2018 – 2023*

Experience

Research Assistant — Aug. 2024 – Present
Australian Institute of Machine Learning (AIML) — *Adelaide, Australia*

- Contributed to the development of a vision language model (VLM) for classifying musculoskeletal diseases in X-ray images by leveraging image-text pairs.
- Tested and implemented various large language models (LLM) to extract and structure information from over 260,000 medical reports.
- The converted reports were used alongside their corresponding X-ray images to train the VLM.

Projects

Medical Report Analysis Automation | *Python3, Ollama* — Aug 2024

- Developed a Python tool leveraging the LLaMA model to extract and summarize disease and body part information from medical reports.
- Automated the analysis and batch processing of reports, enhancing data extraction efficiency.
- Designed and optimized prompts to generate accurate, structured outputs in JSON format.
- The output dataset was used to train a CLIP model, helping advance AI-assisted diagnosis of medical conditions.

Cryptocurrency Trading Strategy Back Tester | *MATLAB* — May 2024

- Developed a program capable of analyzing over 100 different live cryptocurrencies using Coin Market Cap's API.
- Enabled users to test various moving average strategies with a set investment amount, identifying the most profitable combinations based on real time and historical data.
- Features included live data integration, strategy optimisation, and profit measurement capabilities, enhanced by interactive user interfaces.

Investment Strategy Simulator | *C++* — Oct 2024

- Platform enabled users to simulate four investment strategies on historical market data, including a set deposit, dividend payments, a moving average crossover strategy, and a momentum-based strategy.
- Utilized an object-oriented approach, leveraging principles such as inheritance, polymorphism, and abstract classes to model the listed investment strategies.
- Integrated a graphical user interface, enabling seamless program navigation and offering features beyond investment strategies, such as graphical analysis and tracking price fluctuations.
- Comprising of approximately 5,000 lines of code, the project provided valuable experience in program design, testing, and implementation.

Academic and Leadership Achievements

The University of Adelaide Principals Scholarship Recipient — 2024

- Awarded in recognition of high academic merit and contributions to high school and wider community.
- Efforts recognized by principal, leading to nomination to the university where it was accepted.

Technical Skills

Languages: C++ (proficient), C, Python3, HTML, CSS, MATLAB
Tools: Git, Github, Matplotlib, PyTorch, Excel, Ollama, Hugging Face
3D Design: CAD - 3DEXPERIENCE