Arsh Upadhyaya

Brisbane, QLD | LinkedIn | GitHub | +(61) 434-586-959 | arsh.upadhyaya123@gmail.com

EDUCATION

University of Queensland — **Brisbane, Australia**
Bachelor of Engineering (Hons.) in Software Engineering — *Sept '20 - Jul '25*
Relevant Courses – Multiple Programming Language Courses | Cloud Computing |Software Architecture | Artificial Intelligence | Machine Learning | Functional Programming | Database Management Systems

WORK EXPERIENCE

Blackfoot Capital Ltd — **Remote**
ML Engineering Intern — *Dec '23 - Mar '24*

- Developed and backtested robust trading strategies for S&P 500 stocks using Python libraries (yfinance, Interactive Brokers API, pandas, matplotlib) and a custom backtesting framework.
- Optimized trading strategies by **tuning hyperparameters** and evaluating performance across major US stocks and indices.
- Constructed a historical data repository with **SQL queries and visualizations** for identifying high-potential investment opportunities.
- Deployed a tuned strategy on select stocks, achieving a **2.8%** return over **100** high-frequency trades (HFTs).
- Built a **user-friendly GUI** with **React.js**, connecting to a database and dynamically visualizing real-time performance reports for various trading strategies across different stocks.

PROJECTS

Escape Earth Game — Jul '23 - Nov '23
Group Project

- 50 students in teams of 6 worked on a large game collaborating on GitHub, in sprints across 10 weeks.
- Designed animations and curated assets to enhance game visuals and ensure consistency.
- Maintained the team's feature branch, resolving 20+ **non-trivial merge conflicts** through collaboration with team members and other teams throughout the project.
- Developed meaningful **Junit tests** on core functionality and fixed **code smells** using SonarQube to create good coverage along with an automated workflow in GitHub.
- **Debugged** and **refactored** code to comply with design patterns as decided by the project design team.
- Supervised **UML** and **sequence diagram** creation, ensuring the readability of work done by the team.

Research Thesis — Jul '23 - Jun '24
Individual Project — (Link to Project)

- Trained U-Net models using **PyTorch** on synthetic (1M+ images) and medical datasets (900 images).
- Optimized training pipeline with **SGD**, **batch normalization**, and **ReLU** to address divergence issues
- Analyzed effects of initialization, augmentation, and scale invariance on loss landscape
- Visualised loss trends and model behaviour using **Matplotlib** and Seaborn.

SKILLS

Programming Languages

Proficient - C/C++, Python, Java, HTML/CSS, SQL, Haskell, MATLAB, LaTeX
Familiar - JavaScript, R

Development Tools/Frameworks

Proficient - AWS, Docker, Kubernetes, GitHub, Postman, PyTorch, NumPy, Hadoop, JUnit, SonarQube
Familiar - React, Angular, GCP, Terraform, MongoDB, Flask, FastAPI