Pavanpreet Singh Gandhi | [Website](#) | [GitHub](#) | [LinkedIn](#)

Experience

Machine Learning Internship - Century Tech
London, UK | Jun 25 - Present

Design and evaluate multimodal audio-text reasoning systems for automatic grading of oral assessments.

Graduate Data Scientist - American Express
Brighton, UK | Sep 23 - Aug 24

Developed and deployed an unsupervised time-series model for anomaly and change-point detection in call volume data. Maintained and optimized ETL pipelines using PySpark, Hive, and SQL. Designed and implemented an internal data uploader application, utilized monthly by over 200 employees.

Data Science Internship - American Express
Brighton, UK | Jun 23 - Aug 23

Evaluated SARIMA, Prophet, and neural-network forecasting models to improve time-series predictions. Collaborated with stakeholders to define and refine project objectives.

Machine Learning Internship - Looloo Technology
Bangkok, Thailand | Jul 21 - Dec 21

Developed a novel computer-vision algorithm using Gabor filters to detect and remove underlines from handwritten text. Engineered features from confidential order-book data for an RL model predicting auction prices.

TA and Tutor - Mahidol University
Salaya, Thailand | Jan 21 - Dec 21

Assisted Dr Piti Ongmongkolkul's Discrete Mathematics course and provided Maths Clinic tutoring for first-year undergraduates.

Projects

Incentivizing both Grounding and Reasoning in LLMs with Online RL

Applied proximal policy optimization (PPO) to fine-tune LLaMA-based LLM agents in BabyAI-Text with a "reasoning-before-action" prompting strategy, grounding LLMs in sequential decision-making. In this simple setting, reasoning-before-action did not improve sample efficiency but provided interpretability advantages, and we also observed an interesting "reasoning collapse" phenomenon.

Stock Portfolio Optimization with Deep Reinforcement Learning

Trained a deep Q-learning agent for stock portfolio optimization. Benchmarked against mean-variance and Sharpe-ratio baselines, with comparable or superior returns in test scenarios.

RelyAI – Financial News Summarization App

Developed a prototype LLM-powered financial-news summarisation app in under 48 hours during UCL's "Explore Your Entrepreneurial Idea" course, demonstrating rapid prototyping.

Education

MSc Computational Statistics and Machine Learning - University College London (UCL)
London, UK | Sep 24 - Present

Courses: Open-Endedness and General Intelligence, Reinforcement Learning, Bayesian Deep learning, Machine Learning Seminar, Probabilistic Unsupervised Learning, Statistical Models and Data Analysis, Supervised Learning, Applied Deep Learning.

BSc Applied Mathematics - Mahidol University (MUIC)
Salaya, Thailand | Aug 19 - Apr 23

Relevant coursework: linear algebra, multivariable calculus, probability & statistics, differential equations, real analysis; electives in machine learning, deep learning & optimization. Cumulative GPA of 3.89.

IB Diploma - NIST International School
Bangkok, Thailand | Aug 17 - Jun 19

Focused on Maths, Physics, and Computer Science at a higher level.

IGCSE - NPS International School
Singapore | Aug 09 - Jun 17

Achieved strong results, including A* in additional mathematics.

Skills

Languages: Python, R, SQL, Bash
Frameworks: PyTorch, JAX, Hugging Face, Scikit-learn, Statsmodels
Modeling: Reinforcement Learning, LLM Fine-tuning, Agentic Systems, Time-series & Anomaly Detection, Deep Learning, Classical ML, Statistical Modeling
Data: PySpark, Hive, ETL
Tools: Git, Docker, Linux, Jupyter Notebooks, Marimo, Streamlit, Weights & Biases
Soft Skills: Research & Analysis, Communication, Project Management, Initiative, Collaboration

Courses and Certifications

Deep Learning Specialisation
Taught by Andrew Ng, Coursera

Neural Networks: Zero to Hero
Taught by Andrej Karpathy, YouTube

AI Agent Fundamentals
Hugging Face