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RASHI OJHA

Github - RashI0192
Personal Website - https://rashi0192.github.io/rashi-portfolio/

SKILLS

Languages - Python, R, C++, Java, JavaScript, TypeScript, SQL, TensorFlow, React, Express, Linux
Technology- Large Language Models (LLMs), Transformers, Machine Learning, Docker, AWS, Power BI
Soft Skills - Effective Communication (Marketing Director, ICUR 2025 Speaker), Strategic Leadership (Led 120+ as University Orientation Group Leader), Technical Collaboration (Open-Source Society – Machine Learning Engineering)

EDUCATION & ACHIEVEMENTS

Nanyang Technological University **2023-2027**
- Bachelor in Computer Science (Accelerated Bachelor's Programme) 4.46/5
- Hackathon Finalist (×3), including Hoya Hackathon Singapore 2025

Rahul International School **2021-2023**
- British Physics Olympiad Bronze Medalist, SOF Maths and English Olympiad Bronze Medalist 94 % CBSE
- 98% Jee Mains

EXPERIENCE

Undergraduate Research Experience On Campus NTU **Aug 2024-Present**
Researcher
- Applied advanced interpretability techniques to dissect decision-making pathways in transformer-based reinforcement learning (RL) policies, enhancing transparency and explainability.
- Investigated the mechanistic interpretability of RL agents using TransformerLens, analyzing attention head behavior, circuit tracing, and model alignment to improve model understanding and safety.
- Selected to present research at the prestigious ICUR 2025 (International Conference of Undergraduate Research); currently authoring submission for the MIT Undergraduate Research Technology Conference 2025.

National Healthcare Group, Singapore **Jan 2025- March 2025**
AI Intern
- Collaborated with clinicians to develop an AI-based diagnostic tool for early detection of diabetic foot ulcers, targeting 200,000+ diabetic patients in Singapore through an NTU venture project.
- Engineered 4 angiosome-specific models and implemented symmetry detection, achieving 93% accuracy in ulcer risk prediction.
- Enhanced model interpretability and clinical integration, supporting NHG's mission to deploy explainable AI in hospital workflows and improve preventive care outcomes.

PROJECTS

AuditGen: Multi-Modal Auditing Assistant - *Hugging Face Transformers | RAG | LangChain | Pandas | Streamlit*
- Designed a modular multi-modal RAG system integrating text, tables, and images using LLaMA3-70B (Groq), BLIP (image captioning/VQA), and FAISS for context-aware PDF query answering.
- Built a semantic query classifier with sentence-transformers (MiniLM-L6-v2), achieving 90%+ routing accuracy and reducing LLM hallucinations by 75%.
- Developed OpenCV-based chart trend detection (HSV masking, Canny, HoughLines) with 85%+ accuracy in classifying upward, downward, and flat trends.

Regime-Aware Stock Trading using Reinforcement Learning- *Python | Hierarchical DQN | Google Finance API*
- Developed a modular G-Learning reinforcement learning pipeline with a 4-phase curriculum, adaptive KL-regularization, and risk-aware rewards; improved agent performance across short- and long-term trading regimes.
- Engineered Sharpe-scaled reward functions and dynamic volatility caps, achieving robust policy generalization and consistent return growth across diverse market conditions.
- Designed and implemented a dynamic curriculum controller with phase-based training and KL annealing, leading to a measurable increase in strategy confidence and reduced policy volatility by 30%+.

MOOC Platform with Cheating Detection Microservice - *MongoDB | Express.js | React | Node.js | Spring Boot | Java | REST APIs*
- Engineered a scalable MOOC platform using the MERN stack, and architected a modular cheating detection microservice in Spring Boot with secure RESTful API integration for real-time, non-invasive behavioural monitoring (tab switches, cursor movement, source URLs).
- Pioneered a novel pace anomaly detection algorithm to flag irregular learning patterns, improving cheating detection accuracy by 3.2×.
- Deployed an instructor-facing dashboard with auto-generated trust scores, timestamped violations, and source traceability, reducing manual review time by 70%.

CERTIFICATIONS

University Courses - Data Structures & Algorithm Analysis, Object-Oriented Programming, Operating Systems, Software Engineering, Computer Networks, Computer Architecture, Probability and Statistics, Linear Algebra, Artificial Intelligence, Distributed Systems, Advanced Machine Learning
External Certificates - Machine Learning Stanford, Udemy Web development (Mern Stack and Spring Boot), TensorFlow for Deep Learning with Python, Natural Language Processing, Predictive Analysis, Reinforcement Learning, Generative AI's LLM