Yash Raj

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EDUCATION

Nanyang Technological University, Singapore Aug 2025 - May 2029
Bachelor of Computing in Computer Science, 4.60/5.0 CGPA

EXPERIENCE

Cyber Square AI and Robotics Private Limited Jun 2024 - Jun 2025
Software Engineer Intern

- Developed an AI-driven biometric authentication system by leveraging Computer Vision libraries and NumPy to perform facial feature extraction and store face encodings as binary data.
- Architected a secure backend infrastructure with Django and PostgreSQL, implementing role-based access control via SimpleJWT and automating complex logic for scheduling conflict detection and user lifecycles.
- Led a team of interns as Scrum Master, utilising Jira to manage feature backlog and ensuring seamless frontend integration by following RESTful API best practices.

PROJECTS

Algonauts Oct 2025 - Oct 2025
1st Place, SheBuilds Datathon (NTU Women in Tech)

- Surpassed 40 teams in a quantitative elimination round to qualify for the Top 7 final pitch.
- Trained a Random Forest model with 92% accuracy to predict carbon emissions by analysing economic trade-offs between tourism GDP and environmental impact.
- Implemented country-level segmentation to categorise nations into strategic archetypes, delivering data-driven policy recommendations for balancing tourism growth with emission limits.

AI Ascent Aug 2025 - Sep 2025
2nd Runner-Up, SAPxNTU Hackathon

- Architected a scalable multi-agent AI backend using Django and LangChain, orchestrating specialised agents for onboarding, mentorship, and career development via Groq-hosted LLMs.
- Engineered an enterprise-grade safety layer leveraging 2 HuggingFace models (DeBERTa-v3 Prompt Guard and RoBERTa Toxicity Model) to automate PII redaction, bias filtering, and defence against prompt injection attacks.
- Deployed containerised REST APIs on Azure, integrating Supabase and pgvector to perform semantic search and real-time organisational insights across 5+ distinct user dashboards.

CerviNet Aug 2025 - Aug 2025
3rd Place, NTU BioHackathon (School of Biological Sciences)

- Created a diagnostic AI tool achieving 96% accuracy and 94.5% recall in predicting cervical cancer from human RNA gene expression levels.

Godot AI Kit (89 GitHub Stars) Sep 2022 - Mar 2025
Lead Developer

- Engineered a from-scratch ML library in GDScript, implementing CNNs, Deep Q-Networks, and Backpropagation without external libraries.
- Developed custom implementations of ADAM/AMSGrad optimisers, Experience Replay, and Target Network synchronisation for real-time model training.
- Implemented Evolutionary Algorithms (Genetic Programming) and Minimax with Alpha-Beta Pruning to provide a hybrid approach to autonomous agent decision-making.

CO-CURRICULAR ACTIVITIES

HackOSS (Under NTU Open Source Society) Sep 2025 - Jun 2026
Technical Director | Project: Stickmanify

- Directed a 7-person cross-functional team to build a pose-conditioned video generation pipeline, executing end-to-end model training by curating normalized datasets and training custom Style and Temporal LoRAs for stable, stylized stickman animation.
- Architected and engineered the model serving backend, integrating a ComfyUI inference pipeline with serverless GPU infrastructure on Runpod to optimize generation latency and application performance.
- Managed the end-to-end cloud deployment on Azure and infrastructure scaling, integrating a Spring Boot backend and React frontend for the final production environment.

SKILLS

Programming Languages: Python, Java, GDScript
AI & Machine Learning: PyTorch, LLMs (LangChain, Groq, HuggingFace), Computer Vision (OpenCV)
Web & Backend: Django, FastAPI, RESTful APIs, PostgreSQL, Supabase
Tools & Infrastructure: Git/GitHub, Docker, Azure, Jira (Agile/Scrum), Linux, Godot Engine