ZULFAQAR HAFEZ
APPLIED AI PENULTIMATE STUDENT

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EDUCATION

Singapore Institute of Technology (SIT)   **Sept 2024 - Present**
Bachelor of Science (Honours) in Applied Artificial Intelligence
- Awarded $20,000 Sparks Community Innovation Fund at Community Hackathon 2025, hosted by PA & OGP.

Republic Polytechnic (RP)   **Apr 2019 - May 2022**
Diploma in Business Information Systems
- *Google for Startups Cloud Hackathon Singapore 2022 - Top 20*

PROJECTS

Waaah-Comics| AI-Powered Comic Creation Platform   **Jan 2026**
- **Engineered a generative pipeline** using **Stable Video Diffusion (SVD)** to transform static comic panels into animation
- **Fine-tuned SVD using Lightning LoRA**, significantly reducing trainable parameters while maintaining high temporal consistency across 24 panel layouts.
- **Optimized model throughput** by implementing **FP8 precision** and **Ahead-of-Time (AOT) compilers**, reducing VRAM consumption and accelerating inference speed for real-time generation.

Real-Time Multi-Label PPE Detection System | *SIT (Academic Project)*   **Sep - Nov 2025**
- **Architected a real-time computer vision pipeline** using YOLOv8, achieving **0.64 mAP50** for identifying safety gear in industrial environments.
- **Deployed model to Hugging Face**, creating an accessible cloud endpoint for inference and utilizing Grad-CAM to visualize model activation maps for debugging.
- **Validated anatomical positioning** by implementing MediaPipe geometric logic checks, reducing false positives in complex skeletal orientations.

FairWork Contract   **July - Aug 2025**
- Architected a document translation platform using **Next.js** and **OCR**, integrating the **SEA-LION LLM** via API to perform context-aware translation of legal contracts for migrant workers.
- Implemented **layout preservation algorithms** to maintain original document structure and utilized NLP to simplify complex legal jargon into plain language.

EXPERIENCE

Product Lead (Citizen Developer), People's Association   **Sept 2025 - Present**
- **Directing "Churp,"** a $20,000 CIT-funded digital solution designed to optimize community garden plot allocation for the **PA.**
- **Leading Agile sprints** and managing cross-functional teams comprising developers and mentors to pilot launches in Tengah.
- **Orchestrating stakeholder engagement** between technical teams and civic leaders to align product deliverables.

Order Management Specialist Intern, Infineon Technologies   **Mar 2021 - Aug 2021**
- Engineered a Python automation system (Selenium, BeautifulSoup) for market data collection, reducing manual research time by 80%.

CO-CURRICULAR ACTIVITIES/COMMUNITY SERVICE

President, SIT Magical Hearts   **Jan 2025 - Jan 2026**
- Directed inclusive outreach programmes for elderly and special-needs groups; grew volunteer engagement by 50%.
- Represented the organization as a featured speaker at the **SG Cares Volunteer Networking Session 2025** in a fireside chat with Senior Minister of State Sun Xueling.

COMPETITIONS

SIT HackRift 2025 – Finalist   **Dec 2025**
- Attained Finalist status by developing *GuideMeSG*, an inclusive navigation app for Persons with Intellectual Disabilities.
- Integrated LTA DataMall APIs to solve real-world accessibility challenges, turning user research into a functional UI/UX prototype.

Hack for City 2025 – SMU Smart City Society (Finalist)   **Mar 2025**
- Developed a ResNet computer vision model for automated trash classification to optimize waste management.
- Delivered a full-stack prototype (Frontend + Model) within the hackathon timeframe, integrating real-time visual analytics.

TECHNICAL SKILLS

- **AI/ML Frameworks:** PyTorch, **PyTorch Lightning**, TensorFlow, **Hugging Face Hub**, scikit-learn, **OpenCV**
- **Generative AI & LLMs:** Stable Video Diffusion (SVD), **Lightning LoRA Fine-tuning**, SEA-LION, Google Gemini, RAG
- **Computer Vision:** YOLOv8, **MediaPipe**, **Grad-CAM (Explainability)**, ResNet, Image Processing, Video Analytics
- **Model Optimization: FP8 Precision**, **Ahead-of-Time (AOT) Compilation**, Data-Centric AI (Active Learning)
- **Certifications: NVIDIA DLI:** Gen AI with Diffusion Models, Exploring Adversarial Machine Learning, Fundamentals of DL