

ZULFAQAR HAFEZ

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EDUCATION

Singapore Institute of Technology (SIT) Bachelor of Science (Honours) in Applied Artificial Intelligence	Sept 2024 - Present
• Awarded \$20,000 Sparks Community Innovation Fund at Community Hackathon 2025, hosted by People's Association and Open Government Products	
Republic Polytechnic (RP) Diploma in Business Information Systems	Apr 2019 - May 2022

PROJECTS

PanelPop Studio AI-Powered Comic Creation Platform	Jan 2026
• Developed a full-stack application (Next.js , FastAPI , Supabase) enabling gesture-controlled drawing using MediaPipe hand tracking for touch-free art creation.	
• Integrated Google Gemini 2.5 Flash for sketch-to-art transformation and text-to-image generation across 24 customizable comic panel layouts.	
• Implemented Google Veo 2 for animated video generation from static comic panels, creating cinemagraph-style motion effects.	
• Designed an accessible UI with dwell-time gesture activation and voice command integration using Web Speech API .	
Real-Time Multi-Label PPE Detection System S/T (Academic Project)	Sep - Nov 2025
• Engineered a real-time computer vision pipeline using YOLOv8 , achieving 0.64 mAP50 for multi-label PPE detection. Implemented MediaPipe for geometric logic checks, reducing false positives by validating anatomical positioning.	
• Executed a Data-Centric AI strategy , applying active learning techniques to distill a noisy 100k dataset into 6k high-value balanced images. Integrated Grad-CAM to visualize model activation maps and debug failure cases.	
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
• Manage Churp , a CIT-funded digital solution optimizing community garden plot allocation for transparency and efficiency.	
• Lead agile sprints and cross-functional teams (developers, mentors) to drive the pilot launch in Tengah.	
• Oversee UI/UX validation and stakeholder management to align technical deliverables with civic engagement goals.	
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%.	
• Managed executive operations, logistics, and partnerships with SIT advisors and NGOs.	

COMPETITIONS

SIT HackRift 2025 – Finalist	Dec 2025
• Attained Finalist status by developing GuideMeSG , an inclusive navigation app for Persons with Intellectual Disabilities (PWIDs).	
• Integrated LTA DataMall APIs to solve real-world accessibility challenges, translating 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:** PyTorch, YOLOv8, ResNet, MediaPipe, OpenCV, scikit-learn, Gemini, Grad-CAM
- **Data:** pandas, NumPy, SQL, PostgreSQL, MongoDB, data visualization
- **Stack:** Python, SQL, JavaScript, Next.js, FastAPI, PostgreSQL, MongoDB, Git.