

ZULFAQAR HAFEZ

+65 9882 5024 | zulfaqarhafez@gmail.com | www.linkedin.com/in/zulfaqar-hafez | <https://zulfaqarhafez.vercel.app> | <https://github.com/ZulfaqarHafez>

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 People's Association and Open Government Products

Republic Polytechnic (RP)

Apr 2019 - May 2022

Diploma in Business Information Systems

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 | SIT (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.