Aryan Arvind Singh (辛恩彥)

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Education

National Tsing Hua University, MS Institute of Information Systems and Applications **Sept 2026 - Present**
Hsinchu City, Taiwan

National Tsing Hua University, BS Electrical Engineering and Computer Science **Sept 2022 – June 2026**
Hsinchu City, Taiwan

Work Experience

Lead Software Engineer 1 (AI/ML), Camus Technologies – Taipei City *July 2026 – Present*

- Integrated large language models into a production product, including prompt engineering, tool-use design, and cost optimisation via prompt caching, reducing per-request API costs significantly
- Built and maintained a pluggable backend module architecture enabling independent feature development across 28+ product modules
- Implemented row-level security and multi-tenant data isolation at the database layer, ensuring strict data separation across customers

Software Engineer Intern (AI), Camus Technologies – Taipei City *March 2026 – July 2026*

- Contributed to a medical imaging pipeline integrating a DICOM viewer and AI-assisted radiology reporting into a clinical product
- Tested core application workflows, identifying root causes of system failures and resolving bugs to strengthen software stability and reliability

Undergraduate Research Assistant, Digital Image Processing and Computer Vision Lab,
National Taiwan University – Taipei City *June 2025 – Present*

- Working on computational imaging research involving SART-based 3D CT reconstruction and development of image-processing pipelines for high-quality volumetric analysis
- Developing deep learning U-Net models for shadow and illumination artifact removal in X-ray images to enhance structural clarity for defect analysis

Undergraduate Research Assistant, Design and Analysis Of Algorithms Lab, National Tsing Hua University – Hsinchu City *Sep 2024 – Dec 2025*

- Designed and deployed StudyBuddy, a full-stack study-partner matching platform for NTHU students using React, Flask, MongoDB, and cosine-similarity ranking.
- Implemented preference-based matching across courses, study locations, and availability, with NTHU email access control and production deployment on Vercel and Render.

Projects

ResumeAnalyser (NLP, ML)

- Built an AI-powered resume classification system that extracts text from PDFs, predicts job categories, and provides skill-based feedback using TF-IDF, Scikit-learn, and XGBoost

Fragments of Me (AI Art, Diffusion Models)

- Built an emotion-to-art system leveraging GPT-4 for prompt enrichment and Stable Diffusion 2 for image synthesis, creating symbolic visual interpretations of emotions via a Gradio interface

MovieMood - AI Travel Itinerary Generator (Node.js, React)

- Developed and deployed a personalised travel itinerary generator for the Perplexity Hackathon, integrating Perplexity Sonar API with React frontend and Node.js backend to create intelligent travel recommendations based on user preferences

DefectQuest (Multimodal AI, Computer Vision)

- Built a SMT inspection system that analyses BGA X-ray images to detect per-ball solder defects, evaluate IPCA-610 Class 3 compliance, and generate end-to-end inspection insights including defect localisation, risk scoring, root-cause reasoning, and sustainability impact estimation for electronics manufacturing

Skills

Programming Languages: C++, C, Python, TypeScript, JavaScript
Machine Learning & AI: Supervised & Unsupervised Learning, Scikit-learn, Deep Learning (CNNs, RNNs)
Computer Vision: OpenCV, PyTorch, U-Net, Diffusion Models, Image Segmentation, Medical/X-ray Image Processing, 3D Reconstruction
Natural Language Processing (NLP): TF-IDF, Regex, Cross-Validation, Text Preprocessing & Feature Engineering
Data Science & Analytics: TensorFlow, Pandas, NumPy, Matplotlib, Data Visualisation, AUC-ROC
Mobile & Web Development: React Native, Expo, Flutter, MongoDB, Firebase, NativeWind, Tailwind CSS

Awards & Certificates

MOE Taiwan Scholarship (Graduate), Ministry Of Education Taiwan *Sept 2026 – Present*
MOE Taiwan Scholarship (Undergraduate), Ministry Of Education Taiwan *Sept 2022 - Jun 2026*
Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate, Oracle *Oct 2025*
Complete AI & Machine Learning, Data Science Bootcamp, Udemy *Sep 2024*