

How Pei Yan

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PROFESSIONAL SUMMARY

Software Engineering candidate with a dual-degree background and a specialized focus on AI Engineering, NLP and Computer Vision. Proven track record in architecting production-ready, AI-powered systems. From multi-modal music recommendation engines to accessibility platforms for Color Vision Deficiency, I expert in bridging the gap between complex business logic and high-performance technical architecture, with hands-on experience in full-stack deployment (Next.js, FastAPI, Spring Boot).

CORE SKILLS

- AI & Machine Learning:** Generative AI (LLMs), Local Hybrid RAG, Semantic Embeddings, Computer Vision (OpenCV), NLP (Transformers, BART, T5), CLIP (OpenAI), TensorFlow.js, PyTorch.
- Full-Stack Development:** React 19, Next.js, TypeScript, Python (FastAPI/Flask), Java (Spring Boot), Node.js
- Data & Architecture:** Bayesian Optimization, Optical Flow, PostgreSQL, Mongo DB, AWS, RESTful API Design
- Automation & Strategy:** n8n, Power Automate, IREB Certified Requirements Engineering (CPRE), Agile/Scrum

AI & TECHNICAL PROJECTS

CVD Vision AI Platform | React, FastAPI, TensorFlow.js, OpenCV *Apr 2026 – Present*

- Architected an AI-powered accessibility suite to assist 300M+ individuals with Color Vision Deficiency (CVD).
- Implemented Personalized Vision Calibration using Bayesian optimization for custom color-correction profiles.
- Developed Semantic Media Remapping for real-time video processing using Optical Flow and TensorFlow.js.

Statistics Toolkit: AI-Augmented Analytics & Predictive Suite | Python, Scikit-Learn, Ollama *Feb 2026 – Apr 2026*

- Developed a professional-grade predictive analytics platform integrating Ollama for private, local AI interpretations.
- Engineered a Local Hybrid RAG Engine with semantic embedding matches and optimized, zero-dependency TF-IDF search fallback.
- Built a machine learning suite for linear/logistic regression and model audit metrics (MAE, RMSE, R^2).
- Implemented automated Assumption Auditing (Shapiro-Wilk, Levene's) to prevent biased inferences.

VibeMatch AI: Intelligent Music Matchmaker | Python, CLIP (OpenAI), OpenCV *Oct 2025 – Dec 2025*

- Built a multi-modal AI engine that analyzes video mood and energy to recommend royalty-free, monetization-safe music.
- Leveraged CLIP-ViT-B-32 for semantic scene labeling and SSIM for visual tempo analysis.
- Integrated live Freesound API v2 to enforce metadata guardrails and zero-strike copyright policies.

AI Text Summarizer | Python, Hugging Face Transformers, PyTorch, Streamlit *Jun 2025 – Aug 2025*

- Deployed a real-time NLP engine utilizing BART and T5-Small models for text compression.
- Optimized resource usage by 40% through model caching and memory-efficient loading strategies.

PROFESSIONAL EXPERIENCE

Digital Project Intern | Averis Sdn. Bhd., Kuala Lumpur *Jan 2026 – Apr 2026*

- Process Automation:** Designed an automated Project Budget Validation Workflow using low-code, replacing manual checks with real-time dynamic data retrieval.
- Strategic Analysis:** Developed and presented a technical business case for enterprise low-code adoption to the Chief Digital & Information Officer (CDIO).
- Cloud Governance:** Built a multi-year TCO framework for cloud cost monitoring, optimizing CAPEX/OPEX distribution.

EDUCATION

Sunway University | Bachelor of Software Engineering (Hons) *Jan 2023 – Aug 2026*

- CGPA: 3.82/4.00** | Dean's List Award (2023 – 2026)
- Jeffrey Cheah Scholarship** | Academic Excellence & Entrance Award (2022–2025)
- Semester Abroad:** Lancaster University, UK (Global Mobility Scholarship Recipient)

LICENSES & CERTIFICATIONS

- Microsoft:** Automate a business process using Power Automate (Apr 2026)
- Microsoft:** Use AI Builder in Power Automate (Apr 2026)
- Ministry of Digital Malaysia:** AI untuk Rakyat (Jan 2026)
- Ministry of Digital Malaysia:** Cloud untuk Rakyat (Jan 2026)
- Malaysian Software Testing Board:** Certified Professional for Requirements Engineering - IREB CPRE (Sep 2025)
- Forage:** Deloitte Australia Technology Job Simulation (Mar 2025)
- SAS:** Data Literacy Essentials Professional Certification (Jul 2024)