ARYAN SHARMA

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SUMMARY

Bachelor of Artificial Intelligence graduate from UTS (2026, WAM 78.88) with hands-on experience building applied AI systems end to end: RAG pipelines, computer vision models, and reinforcement learning agents. Independent projects include a deployed multi-tenant RAG chat system and a personal AI assistant platform, built to explore production concerns such as data isolation, retrieval quality, and prompt-injection defense. Commencing Honours research on EEG brain connectivity with graph neural networks at the UTS CIBCI Centre in July 2026. Seeking junior AI/ML, computer vision, or robotics engineering roles.

EDUCATION

Bachelor of Information Technology (Honours) — *Commencing July 2026*

University of Technology Sydney | Supervisor: Dr. YK Wang, CIBCI Centre

- Research topic: EEG-based brain connectivity analysis using graph neural networks, with applications to autonomous systems control

Bachelor of Artificial Intelligence — *Completed 2026*

University of Technology Sydney | WAM: 78.88 | GPA: 5.94

Relevant coursework: Deep Learning and CNNs, Machine Learning, Reinforcement Learning, Information Security and Management, Computational Intelligence, AI/Analytics Capstone

Diploma of Information Technology — *June 2023 to June 2024*

University of Technology Sydney

SELECTED PROJECTS

Ask My Business | Multi-tenant RAG Chat System — *2026 to Present*

Independent full-stack project | FastAPI, PostgreSQL with RLS, ChromaDB, Redis, RQ, Railway

- Designed and deployed an embeddable AI chat widget that answers customer questions grounded in a business's own content, with human handoff when retrieval confidence is low
- Built multi-tenant isolation with forced Row-Level Security in PostgreSQL and per-client ChromaDB collections, so a query bug cannot leak data across tenants
- Deployed to a live small-business website; static JS widget served byte-identical with runtime config fetched via a public widget key

Jebb | Personal AI Assistant Platform — *2025 to Present*

Independent full-stack project | FastAPI, Next.js 15, Supabase (pgvector), Celery, Redis, ElevenLabs, Railway

- Built a modular dashboard of 11 widgets (notes with wiki-links, knowledge graph, tasks, calendar, briefings) over a shared backend, used daily as a living testbed for AI system design
- Implemented a voice pipeline as an explicit state machine (IDLE, LISTENING, PROCESSING, SPEAKING) with barge-in and sentence-streamed TTS, plus cross-session memory via pgvector
- A hardened portfolio edition powers the AI concierge on builtbyaryan.dev (launching soon), with delimited untrusted input, per-IP rate limiting, and streamed responses

AI-Powered Legal Risk Assessment Platform | Technical Contribution — *2025 to Present*

Confidential Australian legal-tech startup | Node.js, Fastify, pgvector, Anthropic API

- Built pgvector-based RAG pipeline over Australian employment law corpus (Fair Work Act coverage)
- Designed 4-pass processing architecture with 17 operations feeding a 5-band risk classification model
- Implemented security hardening against prompt-injection risk-band steering by moving classification to validated structured-output enums

Few-Shot Adaptation in CLIP | Capstone Project — *2026*

Awarded High Distinction (95) | PyTorch, CLIP, ConvNeXt, ViT, Knowledge Distillation

- Reproduced and compared five few-shot CLIP adaptation methods: LP++, CoOp, PromptSRC, TaskRes, PromptKD
- Best result: PromptKD (ConvNeXt-Base teacher, ViT-B-32-256 student) on Flowers102 at 16-shot reached 74.86% top-1 accuracy versus 72.91% zero-shot baseline, with 606K trainable parameters over 5 epochs
- Investigated generalisation under distribution shift and cross-dataset transfer

AutoLZ | Autonomous Drone Landing System *May 2025*

YOLOv5, OpenCV, Object Detection, Real-time Inference

- Developed a computer vision pipeline to detect safe landing zones using a YOLOv5 detection model, biased toward recall on the safe class
- Collected, labelled, and preprocessed a custom image dataset with augmentation; integrated inference with control logic for demonstration

SonarMapper | Underwater Autonomous Navigation Agent *October 2025*

Reinforcement Learning, PPO, Stable Baselines3, Gymnasium

- Implemented a PPO-based RL agent for navigation in a simulated underwater environment under partial observability
- Designed reward functions and hyperparameter configurations; analysed training behaviour via reward curves and rollouts

TECHNICAL SKILLS

Languages: Python (primary), TypeScript, JavaScript, Java, SQL, HTML/CSS

ML and Deep Learning: PyTorch, TensorFlow/Keras, Hugging Face Transformers, CLIP, YOLOv5

Computer Vision: OpenCV, object detection, image preprocessing and augmentation

Reinforcement Learning: Stable Baselines3, Gymnasium, PPO, reward design

LLM Systems: RAG pipelines, pgvector, ChromaDB, prompt engineering, Anthropic API, structured outputs

Backend: FastAPI, Fastify, PostgreSQL with RLS, Redis, Celery, RQ

Frontend: Next.js, React, Tailwind CSS

DevOps and Tools: Docker, Railway, Supabase, Git, Linux CLI, Google Colab, Jupyter

WORK EXPERIENCE

Postal Assistant | Australia Post agency (Shreenidhi Pty Ltd) *June 2023 to Present*

Sydney, Australia

- Deliver customer service and troubleshoot network, printing, and POS issues
- Manage 100 to 150+ daily transactions including bill payments, Western Union, and stock sales

LEADERSHIP EXPERIENCE

Assistant General Secretary | UTS Students' Association (UTSSA) *April 2025 to Present*

- Advise executive decision-making through SRC briefings and structured inputs on university-wide student initiatives
- Coordinate communications across student leadership, staff, and university administration

Junior IT Executive | UTSoc, UTS *February 2024 to December 2024*

- Managed event technology, provided technical support, and assisted in organising society activities

REFEREES

Available on request.