# Ziyi Wang

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## 👤 Summary

Master of AI student specializing in **Deep Learning**, **Full-Stack AI Engineering** and **Cloud Architecture**. Built **Objection Builder**, a Serverless SaaS on AWS cutting costs by **99%**, and engineered an adaptive AI tutoring system. Experienced in architecting custom CNNs (**DynamicRELAN**) with **85% accuracy**. Proficient in Python, React, Docker, and AWS, seeking a Graduate AI Engineer role to leverage skills in model optimization and scalable product deployment.

## 🎓 Education

**The University of New South Wales** | Master of IT (AI Specialization)　　　　　Feb 2024 – Dec 2025
- WAM: 76/100 | **Key Coursework:** Artificial Intelligence, Computer Vision, Deep Learning, Algorithms.

**University of Alberta** | **Bachelor of Science (Mathematics)**　　　　　Sep 2018 – Apr 2023
- GPA: 3.4/4.0

## 🖥 Projects

**Full-Stack AI Engineer** | Adaptive AI Maths Tutor (Capstone)　　　　　Sep 2025 – Dec 2025
- Prompt Engineered a **Socratic AI tutoring system** integrating **Google Gemini**, designing a multi-phase prompt framework that guides students via hints rather than direct answers, supporting multimodal inputs (text & images).
- Architected a scalable **FastAPI** backend and **MySQL** database to implement an **adaptive learning algorithm**, dynamically generating personalized worksheets by analyzing historical error patterns.
- Developed a gamified frontend using **React**, **TypeScript**, and **Framer Motion**, deploying a containerized microservices architecture using **Docker** and **Nginx** for high availability.

**AI Software Developer** | Objection Builder (AI SaaS) | 🌐 Link　　　　　Jun 2025 – Present
- Architected a cost-efficient **Serverless** solution using **AWS Lambda** (via Web Adapter) and **Amplify**, running a containerized Express.js backend with near-zero infrastructure costs compared to traditional instances.
- Implemented a secure **DevOps pipeline** using **Docker** and **ECR**, enforcing security best practices via **IAM** (Least Privilege), **MFA**, and configuring high-performance DNS/SSL via **Cloudflare** and **AWS ACM**.

**Computer Vision Engineer** | Fashion Item Classification (UNSW)　　　　　Feb 2025 – May 2025
- Developed **DynamicRELAN-Classifier**, a custom CNN achieving **85% accuracy** on Fashion100 by integrating a **hybrid attention mechanism** (CBAM + Area Attention) within R-ELAN blocks.
- Reduced training time by **70%** compared to baseline models by optimizing the architecture and implementing specific learning rate schedulers.

**Computer Vision Engineer** | Sea Turtle Segmentation (UNSW)　　　　　Sep 2024 – Dec 2024
- Benchmarked Deep Learning models (DeepLabV3+, U-Net) against traditional methods (HOG/SIFT + Random Forest), establishing **DeepLabV3+** as the superior approach with a peak **mIoU of 0.85**.

## 🛠 Technologies

- **Languages:** Python, TypeScript, SQL, C, Rust
- **Cloud & DevOps:** AWS (Lambda, Amplify, ECR, IAM, Route 53), Docker, Nginx, Cloudflare, CI/CD
- **Web & Backend:** React, Next.js, FastAPI, Express.js, Node.js, REST APIs
- **AI & Deep Learning:** PyTorch, TensorFlow, Keras, Scikit-learn, Google Gemini API, LLM Engineering