Ian Pang

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EDUCATION

Purdue University   West Lafayette, IN

Bachelor of Science in Computer Science, Bachelor of Science in Mathematics   *Expected May 2027*
- Relevant Coursework: Object Oriented Programming (Java), Discrete Math, Programming in C, Computer Architecture, Data Structures and Algorithms

EXPERIENCE

Research Assistant   May 2025 – Present

Zhan Lab, Purdue University   *West Lafayette, IN*
- Engineered a real-time embryo detection pipeline using OpenCV and PyTorch to process 120 FPS high-resolution microfluidic video, achieving 20 ms end-to-end latency from detection to inference.
- Trained a ResNet-based CNN to classify embryo developmental stages with 80% accuracy based on 1,000+ embryo samples, and integrated Arduino control to direct viable embryos to separate channels for experimentation.

Undergraduate Data Science Researcher   Aug. 2025 – Dec. 2025

FedEx - The Data Mine at Purdue   *West Lafayette, IN*
- Developed a Python-based simulation engine to model and optimize the minute-by-minute routing logic for 180,000+ daily packages within the FedEx Indianapolis hub, managing volume from 64 flights and 195 trucks.
- Implemented data pipelines to aggregate and clean 200,000+ raw records, transforming inconsistent inbound data into precise time-series inputs for stress-testing warehouse capacity and identifying system bottlenecks.

Software Engineer Intern   June 2025 – Aug. 2025

Suga International Holdings Limited   *Hong Kong SAR*
- Developed core digital signal processing features in C for an audio mixer, reducing CPU utilization by 40%.
- Minimized system storage footprint by 70% with compression techniques, achieving sub-2MB deployment.
- Designed and launched a dual-core MicroPython architecture with a custom WebSocket-based control server, enabling real-time audio command execution and decreasing operational latency from 120ms to 13ms.
- Implemented automated CI/CD build and test pipelines via GitHub Actions and shell scripts, accelerating development iterations by ensuring consistent, reliable deployment across the product lifecycle.

Software Engineer Intern   June 2024 – Aug. 2024

Suga International Holdings Limited   *Hong Kong SAR*
- Deployed real-time pet detection and robot navigation models on NVIDIA Jetson devices using YOLO and custom CNNs, achieving 99%+ accuracy with low-latency embedded inference.
- Scaled an image preprocessing pipeline for 80K+ images in Python, doubling training throughput and significantly lowering GPU/cloud compute costs.

PROJECTS

Obscurafy | *Swift, Python, Gemini AI*
- 1st Place out of 176 teams for the Cybersecurity track at HackUMass XIII (UMass Amherst).
- Integrated CoreML and a custom YOLOv11 model trained with PyTorch on 8+ open-source datasets, enabling real-time on-device detection and redaction of sensitive data in user photos.
- Built and connected backend services in Swift, leveraged Gemini API for context analysis, and implemented secure data workflows using RESTful APIs and Apple Photos API, ensuring 100% local processing without cloud risk.

Canopy | *XRP Ledger, LangGraph, Python, FastAPI, Next.js, Supabase*
- 2nd Place (1000+ people) for the Ripple Prize at TartanHacks 2026 (Carnegie Mellon University).
- Engineered an AI agent using LangGraph and an ML model to monitor live weather and satellite data, achieving 85% confidence thresholds for claim-less payouts.
- Developed escrow logic and NFT minting on the XRP Ledger to secure insurance funds and issue verifiable digital proof-of-coverage, allowing for instant payments.
- Built a full-stack architecture and a FastAPI backend with PostgreSQL for storing user data and agent reasoning.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript/TypeScript, PostgreSQL, R
Frameworks: React, Node.js, Flask, FastAPI, PyTorch, REST APIs, WebSockets
Tools & Technologies: AWS, GCP, PostgreSQL, Git, Github Actions (CI/CD), Supabase, Firebase, PyTorch, OpenCV, Docker, LangChain
Miscellaneous: Distributed Systems, AI/ML, Agile Methodologies, Project Management, Blockchain