Po–Lin (Berlin) Chen

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Education

Carnegie Mellon University (CMU), School of Computer Science **Dec 2026 (Expected)**
Master of Science in Computer Vision Pittsburgh, PA
- Coursework *(currently enrolled)*: Advanced Computer Vision, Deep Learning Systems, Robot Learning

National Taiwan University (NTU) **Jan 2025**
Bachelor of Science in Engineering (GPA: 4.04/4.3, Rank: 1/66) Taipei, Taiwan
- Coursework: Deep Learning for Computer Vision, Digital Image Processing, Machine Learning

Skills

Programming: Python, C/C++, Java, C#, Shell, CUDA, JavaScript

ML/AI: PyTorch, TensorFlow, JAX, OpenVINO, TensorRT, Hugging Face, OpenCV

MLOps/Deployment: Docker, AWS, Git, Flask, FastAPI, REST API, JetPack SDK, Linux

Experience

Advantech **Jun 2024 - Aug 2024**
Machine Learning Engineer Intern New Taipei, Taiwan
- Achieved **2.7X** inference speedup and **2.2X** faster end-to-end processing by optimizing stateful CNNs on Intel CPU/iGPU-based IPCs using C++, OpenVINO, and NNCF to enhance automated loss prevention in existing self-checkout kiosk products
- Designed and integrated a multi-modal anomaly detection system by fusing visual features with barcode sensors for robust monitoring in retail; achieved **99%** precision and **2%** false alarm rate in identifying 4 high-risk customer activities
- Implemented, containerized, and delivered **10+** REST APIs into a production-ready edge vision AI inference engine

Biophotonics & Bioimaging Lab, NTU **Jul 2022 - Feb 2024**
Research Engineer Intern Taipei, Taiwan
- Accelerated throughput by **2.5X** with **<1.5%** accuracy loss by optimizing MoViNet-Stream inference on embedded systems
- Devised an edge-to-cloud livestock monitoring framework with Raspi and AWS; tested over **60** days in a production farm
- Collaborated with domain experts to build an AWS QuickSight dashboard tracking 7 livestock behaviors, delivering an **84%** reduction in manual inspections, **40%** faster incident response, and a **24%** increase in illness early detection

Projects

Text-to-Image Diffusion Models for Personalized Styles and Characters **Sep 2024 - Dec 2024**
- Redesigned a style-conditioned diffusion pipeline by replacing retraining-heavy ED-LoRA with ControlNet and IP-Adapter, saving **∼5** GPU-hours per style customization; proposed attention alignment loss to avoid attribute leakage among concepts
- Outperformed Custom Diffusion by **1.4%** on CLIP-I and **2.2%** on CLIP-T benchmarks in multi-concept personalization

Video-Based Animal Behavior Recognition and Analysis **Jan 2023 - Aug 2024**
- Developed a video-based self-supervised learning framework for animal behavior recognition using masked autoencoder
- Improved accuracy by **3.7%** via LSTM-based sequence modeling on dense daily prediction sequences with **1440** time steps

GREENIFY: Your Recycle Mentor, Google Hardware Product Sprint **Jul 2023 - Sep 2023**
- Built and deployed a real-time embedded waste classification system on Raspberry Pi using TFLite-optimized EfficientNet
- Demonstrated **<150ms** inference latency and **95%** F1-score across **10** waste categories for low-latency on-device recycling
- Boosted user engagement with **25+** AI-generated animations, **20+** immersive storylines, and an interactive touch interface

ARUI-II: A Vision-Guided Harvesting Robot, Field Robot Competition **Aug 2021 - Oct 2021**
- Led a 4-member robotics development team, applying Agile and MLOps (model versioning, deployment, and field testing)
- Enhanced object detection speed by **4.7X** by optimizing YOLO object detection on NVIDIA Jetson TX2 using TensorRT
- Integrated dual-camera stereo vision with four ultrasonic sensors for robust obstacle avoidance under varied conditions
- Attained **92%** harvesting success in **100+** outdoor trials via a vision-guided feedback control loop for a 4-DOF gripper