Johnny Inn

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Work Experience

Research Assistant, Academia Sinica Nov 2023 – Present

- Conduct CNN system level optimization, focusing on **memory allocation** and **parallel computing**
- Analyze and optimize **Operation layers**, integrating **efficient computation** and **memory strategiess**
- Develop **ONNX layer-matching tools**, enabling dynamic optimization for various architectures

Software Engineer Intern, KPMG IT Advisory Jan 2021 – May 2021

- Experienced in **ISO 27001** security auditing, vulnerability assessment, and penetration testing
- Developed expertise in **security risk management** and **problem-solving in dynamic environments**

Research Experience

A Convolutional Neural Network for Dynamic Shape Inference Dec 2023 - Present

Parallel and Distributed Processing Laboratory, IIS, Academia Sinica | Advisor : Prof. Jan-Jan Wu, Prof. Ding-Yong Hong

- Developed a dynamic-shape CNN with **GEMM acceleration** and **CUDA/cuBLAS** integration for multi-scale processing, along with an automated **ONNX** layer-matching tool reducing manual tuning by 70% and extending support to ResNet, EfficientNet, and MobileNet.
- Achieved 11% higher accuracy, 2× inference speedup, and up to 5.9× computational efficiency over traditional PyTorch models.

The Standard Behavioral Evaluation of Low-Quality Videos Based on Collaborative of Image Processing and Deep Learning July 2022 - Aug 2023

Artificial Intelligence Application Laboratory, CSIE, Tamkang University | Advisor : Prof. Chih-Yung Chang

- Developed an AI-driven action evaluation system integrating **YOLO** object detection, target extraction, and a **3D CNN** twin network, improving audit efficiency and accuracy by 1.2× - 1.6× in **low-quality** surveillance video analysis.

Projects

MetroMesh Media participates in NYU Entrepreneurship Competitionl www.metromeshmedia.com

- Developed an **innovative outdoor advertising model** in partnership with **NYC couriers**, supported by the **NYU Summer Launchpad Accelerator**, to enhance **CPG brand market reach and ROI.**
- **Machine Learning Development**
  - Analyzed pedestrian and traffic data to predict courier behavior and optimize ad placement for maximum exposure, budget efficiency, and ROI.
- **Route Simulation Algorithm**
  - Modeled courier movement to predict ad visibility paths, serving as both a decision-making tool and a data source for ML models.

110 AIGO Competition - Excellence and Honorable Mention July 2021 - Oct 2021

- **Smart Business Location Selection**
  - Leveraged AI and machine learning to optimize store locations and enhance business success through data-driven insights.

- **NLP-Based Address Correction**
  - Developed an AI-powered system for automated English address correction, improving accuracy, reducing manual costs, and enhancing mail delivery success rates.

111 AIGO Competition - Excellence Award Mar 2022 - Oct 2022

- **AI-Powered Action Recognition System**
  - Developed an AI system for automated service audits, detecting non-compliant employee actions in recorded videos, enhancing auditor efficiency, and reducing manual review time and costs, even in low-quality footage.

Industry-Academia Collaboration Sept 2021 – Aug 2023

- FarEasTone - Sun Moon Lake Foot Traffic Analysis
- FarEasTone x LILIN - AI Smart Camera Deployment in Tamkang University
- Innodisk - License Plate Recognition with Edge Computing
- Parking Recommendation System
- Spingence Technology - Model Performance Testing
- Fubon Financial - OCR Form Processing
- Hsing Cheng Service Management - Smile Recognition and Tone Detection

Education

Tamkang University, Master's Degree in Computer Science Sept 2021 – Aug 2023

- **Coursework:** Machine Learning, Deep Learning, Computer Vision, Digital Image Processing, Cloud Computing

Tamkang University, Bachelor's Degree in Information Management Sept 2017 – Aug 2021

- **Coursework:** Computer architecture, Operating Systems

Technologies & Skills

- **Programming & Parallel Computing:** C++, CUDA, Python, C, cuDNN, cuBLAS, OpenCL
- **Deep Learning & Computer Vision:** PyTorch, TensorFlow, OpenCV
- **Cloud & Database Management:** AWS S3, AWS Lambda, Amazon EC2, MySQL
- **Version Control & Operating Systems:** Git, Linux, Windows, macOS