

# En-Jung Tsai

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LinkedIn | Github

## SUMMARY

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- 2+ years of machine learning and deep learning development experience for multiple applications, including Face Recognition, Defect Inspections, and Prediction-Based Scheduling for real-time industrial IoT data.
- 2+ years of research experience in designing novel Attention Models and Loss Function for large-scale face recognition models.

## EDUCATION

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### National Tsing Hua University

Hsinchu, Taiwan

Master of Science in Industrial Engineering; GPA 4.08/4.3

Sep. 2018 - Aug. 2021

- **Thesis:** PAM: Pose Attention Module for Pose-Invariant Face Recognition (CVPR 2022 Submitted)



### National Chung Cheng University

Chiayi, Taiwan

Bachelor of Arts in Economics; GPA 3.46/4.0

Sep. 2012 - Jun. 2016

## SKILLS

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- **Programing Language:** Python, SQL, Matlab, C/C++
- **ML & CV Toolkits:** PyTorch, TensorFlow, OpenCV, Scikit-learn, Numpy, Pillow, Pandas, etc.
- **Other Tools:** Linux, Git, Bash, Vim, Tmux, L<sup>A</sup>T<sub>E</sub>X, GCP, etc.

## EXPERIENCE

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### Research Assistant

Integration & Collaboration Lab (PI: Dr. Wei-Chang Yeh)

Feb. 2019 - Aug. 2021

- Designed and implemented deep face recognition model with large-scale dataset (MS1MV2) to solve the intra-class imbalance problem caused by pose variation and feature imbalance problem.
- Proposed a lightweight yet effective module, named Pose Attention Module (PAM), that improves the robustness of pose-invariant representation learning for deep face recognition.
- Effectively reduces the memory requirements of PAM by more than 75 times compared to the state-of-the-art lightweight method DREAM (CVPR 2018).
- Achieved the state-of-the-art performance in 5 face recognition benchmarks, including LFW, CFP-FP, Age-DB, CPLFW, and CALFW.



### Machine Learning Intern

AU Optonics Corporation

Jul. 2020 - Aug. 2020

- Develop an evaluation system for the periodic preventive maintenance(PM) process of ITO Sputtering Targets.
- Implement state-of-the-art deep learning algorithms to solve defect detection problems in manufacturing at >95% precision and recall.
- Deploy end-to-end inference pipeline to Nvidia Jetson edge devices. Optimize algorithms to provide real-time inference results for PM scheduling.
- The system has increased bottleneck production capacity by 5.5% by effectively controlling periodic PM costs and downtime, and is currently patent pending.



### Teaching Assistant

IEEM1080105: Artificial Intelligence

Sep. 2019 - Jan. 2020

- Lectured to students with 3 research topics: the recent progress of deep learning-based face recognition, the evolution of loss function design, and the attention mechanism of neural networks.
- Provided support for students with learning difficulties.