

# Gi-Luen (Allen) Huang 黃繼綸

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## Education

National Taiwan University, NTU | Feb. 2021 ~ Jan. 2023  
M.S degree in Graduate Institute of Communication Engineering (GICE)  
GPA: 4.30/4.30 Ranking: 1/160

## Technical Skills

- Programming: Python, C++
- Deep Learning Framework: PyTorch
- Developer Tools: Git, Docker
- Libraries: Pandas, Numpy, Scikit-Learn, Matplotlib, Flask

## Research Interests

- Machine Learning
- Deep Learning For Computer Vision
- Deep Learning For Audio Processing

## Languages

- English Proficiency Test Certificate -- TOEIC 825
- CEFR-B2 Vantage
- Mandarin (native speaker)

## Publications

- Chen, P. W., Yang, T. S., Huang, **G. L., Huang**, et.al. "Viewing Bias Matters in 360° Videos Visual Saliency Prediction". IEEE Access 2023.
- **Huang, G. L.**, & Wu, P. Y. (2022, October). "CTGAN: Cloud Transformer Generative Adversarial Network". In 2022 IEEE International Conference on Image Processing (ICIP) (pp. 511-515). IEEE.

## Work Experiences

Machine Learning Engineer, [MobileDrive](#), New Taipei, TW | Jun. 2023 ~ Now

Python/C++/Git/Docker/ROS/PyTorch

- Developed a method for projecting future vehicle trajectories on current front-view images as ground-truth for **3D Vehicle Future Trajectory Model**. This approach utilizes data collected by vehicles equipped with RTK and front-view cameras, enabling model training **with minimal human intervention**.
- Developed and optimized **3D Vehicle Future Trajectory Model**, significantly enhancing performance through empirical experiments focused on **dataset improvement, warping method, and data augmentation**.
- Deployed the quantized model on the **Qualcomm 8295 platform** by converting the Python program to C++. Optimized **model efficiency** achieved **200 FPS**, and the **quantization error (L1 error)** was **reduced from 4.0 to 0.15 (266% ↓)**.
- Integrated the quantized model into the **AR navigation product**, enabling **on-vehicle testing**. The model significantly improved performance in specific scenarios, such as **roundabouts and sharp turns**.

Maching Learning Intern, [Jubo Health](#), New Taipei, TW | Jul. 2022 ~ Aug. 2022

Python/Git/CI & CD/Docker/Kubernetes

- Implemented general frameworks to support various deep learning tasks including recognition, segmentation, and object detection.
- Enhanced the existing Wound Classification Model, **improving accuracy by approximately 3%**.
- Deployed models as a service using Docker on GCP.

Machine Learning Intern, [Neurobit](#), Taipei, TW | Feb. 2022 ~ Jun. 2022

Python/Git/Statistics

- Developed Gaze Estimation Model using a **self-supervised learning technique**, successfully **reducing the error rate by 90%**.
- Developed a feature matching algorithm to accurately detect torsional eye rotation.

IT Intern, [TSMC](#), Hsinchu, TW | Jul. 2021 ~ Sep. 2021

Java/Javascript/Git/Docker/Kubernetes

- Full-stack system integration.
- Implemented backend functionality for a webpage that changes color in response to user button clicks.

## Selected Projects & Awards

[CTGAN: Cloud Transformer Generative Adversarial Network](#) | Feb. 2021 ~ Oct. 2022

[**ICIP 2022**] Design a generative network to remove the cloud region from the temporal cloudy satellite images

[Face Expression and Tone of Voice for Deception System](#) | Mar. 2019 ~ May 2021

[**ICSSE 2020 best student paper award**] Develop a system to extract facial micro-expression to determine whether the subject is lying

[2022 T-Brain Competition -- Lung Adenocarcinoma Pathological Image Segmentation](#) | Mar. 2022 ~ Jun. 2022

Develop Deeplab-v3-plus to segment the cells having STAS features (**2/307, Top 1%**)

[2022 AIda Competition -- Crops Status Monitoring by Image Recognition](#) | Mar. 2022 ~ May 2022

Develop SOTA model "ConvNext" to conduct image classification (**3/428, Top 1%**)

[2022 AIda Competition -- Human Voice Denoising](#) | Feb. 2022 ~ May 2022

Develop an unet-based 1D model with time-frequency fourier transform loss (**6/282, Top 2%**)

[2021 T-Brain Competition -- Traditional Chinese Scene Text Recognition \(Advanced\)](#) | Nov. 2021 ~ Dec. 2021

Apply Yolov5 for scene text detection, and further apply Vision Transformer for scene text recognition (**6/128, Top 5%**)

[2021 T-Brain Competition -- Traditional Chinese Scene Text Recognition \(Intermediate\)](#) | Aug. 2021 ~ Oct. 2021

Apply ArcMargin and Focal loss makes the model learn more useful features (**5/183, Top 3% and Innovation Award from T\_brain**)