Te-Wei (David) Chen

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EDUCATION

University of Illinois at Urbana-Champaign (UIUC) *Aug. 2022 - Dec. 2023*

Master of Engineering in Electrical and Computer Engineering (GPA: 3.8/ 4.0)

National Chengchi University (NCCU) *Sep. 2017 - Jun. 2021*

Bachelor of Science in Mathematical Sciences

TECHNICAL SKILLS

Programming Languages: C++, Python, MATLAB, JavaScript

Libraries: PyTorch, Keras, Scikit-learn, OpenCV

Toolkits: AWS, GCP, Docker, Git, ROS, Gazebo

WORK EXPERIENCE

Rivian Automotive, Inc. **IL, USA**

Machine Learning Intern *Aug. 2023 - Present*

- Leveraged GNU Parallel within CI/CD to streamline tasks concurrently, achieving 20% reduction in overall execution time
- Developed a data-intensive ML testing pipeline using GitLab CI/CD on AWS with Docker, enhancing model testing
- Refined the CI/CD pipeline to boost engineers' development efficiency and facilitate swifter debugging processes

Rivian Automotive, Inc. **IL, USA**

Camera Imaging Intern

QA and Workflow Automation *May 2023 - Aug. 2023*

- Created a tool that automated QA (EOL data) review, eliminating manual operations and reducing analysis time to 2 min.
- Devised a specialized GUI tool for precise exposure time measurement, surpassing conventional tool limitations in challenging condition

Image Object Detection Accuracy Predictor *Jan 2023 -May 2023*

- Integrated feature detection, image quality assessment, and object detection, enhancing system robustness and reliability
- Leveraged image quality metrics to discern the optimal ISP tuning approach to maximize the accuracy of our ML model
- Devised a model predicting image performance in object detection using image quality metrics with MSE less than 2%

Oring Industrial Networking Corp. **Taipei, Taiwan**

Software Engineering Intern *Sep. 2019 - Aug. 2020*

- Addressed livestream video issues by building data-intensive machine learning models for image quality enhancement.
- Developed a real-time neural network for vehicle detection under varied lighting, improving the base model by 5%

RESEARCH EXPERIENCE

Far-Sighted BiSeNet V2 for Real-time Semantic Segmentation *Aug. 2021 - Nov. 2021*

(Computer Vision, Semantic segmentation, Self-attention)

- Accepted by the 17th IEEE International Conference AVSS as the first author
- Proposed an object-integrity aware model maintaining high accuracy with FPS 96 on 1024x 2048 images
- Developed novel self-attention modules and brought 3% (mIoU) enhancement to the base model

RGB-Thermal Fusion Semantic Segmentation *Nov. 2021 - Feb. 2022*

(Computer Vision, Semantic segmentation, Cross-attention, Signal integration)

- Developed channel and spatial attention signal fusion modules, bringing 6.4% mIoU improvement to the model
- Proposed a novel neural network achieved mIoU of 58.3%, an improvement of 3.7% over the SOTA method

SELECTED PROJECTS

Training-Free Adversarial Image Generation with Latent Diffusion Model *Apr. 2023- Jun 2023*

(Generative AI, Data Security, Computer Vision)

- Engineered advanced image attack methods, significantly reducing FID by 75%, while preserving high attack success rates
- Introduced attention-based attack framework, investigating various implementation methods and detailed benchmarking