

I-SHENG FANG

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EDUCATION

Master of Science

September, 2020 - January, 2023

Robotics, National Yang Ming Chiao Tung University, the merger of National Chiao Tung University and National Yang Ming University.

GPA: 4.26 / 4.3 (Phi Tau Phi Scholastic Honor Society)

Graduate student

January, 2020 - June, 2020

Computer Sciences, National Chengchi University.

GPA: 4.3 / 4.3

Bachelor of Science

September, 2013 - January, 2018

Mathematical Sciences, National Chengchi University.

GPA: 2.63 / 4.3

PUBLICATIONS

Best of Both Sides: Integration of Absolute and Relative Depth Sensing Based on iToF and RGB Cameras

I-Sheng Fang, Wei-Chen Chiu, Yong-Sheng Chen

International Conference on Pattern Recognition (ICPR), 2024

Based on my master's thesis and collaborating with Qualcomm. Integrating active sensing modality (indirect Time-of-Flight, iToF) and passive sensing modality (RGB) to estimate high-resolution metric depth without metric depth supervision. The model is weakly supervised by cross-warp (geometric) consistency and structure knowledge distillation.

ES³Net: Accurate and Efficient Edge-based Self-Supervised Stereo Matching Network

I-Sheng Fang, Hsiao-Chieh Wen, Chia-Lun Hsu, Po-Chung Jen, Ping-Yang Chen, Yong-Sheng Chen

Best Paper Award at The 19th Embedded Vision Workshop (EVW) which in conjunction with IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2023.

[\[Paper\(CVF\)\]](#) [\[Code\]](#)

Adapting efficient cost-volume-based stereo matching to self-supervised learning and deploying the network on the drone to improve the robustness. Achieved quasi-real-time depth estimation on NVIDIA Jetson TX2 and real-time depth estimation on NVIDIA Jetson AGX Orin. ES³Net only needs 4 minutes for fine-tuning with novel collected data.

Single Image Reflection Removal based on Knowledge-distilling Content Disentanglement

Yan-Tsung Peng, Kai-Han Cheng, I-Sheng Fang, Wen-Yi Peng, Jr-Shian Wu

IEEE Signal Processing Letters(SPL) Feb. 2022

[\[Paper\(IEEE Xplore\)\]](#) [\[Code\]](#)

Disentangling the reflection and transmission feature via knowledge distillation in order to remove the reflection with a single image.

Self-Contained Stylization via Steganography for Reverse and Serial Style Transfer

Hung-Yu Chen*, I-Sheng Fang*, Chia-Ming Cheng, Wei-Chen Chiu.

(* indicates equal contribution.)

IEEE Winter Conference on Applications of Computer Vision (WACV), 2020.

[\[Paper\(arxiv\)\]](#) [\[Paper\(CVF\)\]](#) [\[Project Page\]](#) [\[Code\]](#)

Co-First author. Combining neural style transfer and deep steganography in order to resolve reverse and serial issue of style transfer.

PROJECTS

Justfont

July, 2021 - September, 2021; June, 2023 - September, 2023

AI Consultant

Implemented state-of-the-art generative models, integrated these models into Justfont's font design workflow, and provided strategic guidance, resulting in a 15-30% reduction in design time for Justfont, a distinguished Taiwanese font company known for its typeface design and webfont service.

A Century of Heartfelt Sentiment:

100th Anniversary Special Exhibition of the Taiwan Cultural Association

2021

The exhibition of National Museum of Taiwan Literature, Tainan, Taiwan.

Synthesizing DeepFake video for historical figure of Taiwan Cultural Association, an important organization during the Japanese rule of Taiwan.

Font Design with Progressive invariant GANs

2017

Honorable Mention at MOST Workshop on Generative Adversarial Networks and GAN Project Competition.

Introducing GLCM, a invariant, in progressive growing VAE-GAN to embed font in \mathbb{R}^{300} latent space. Generating new font or glyph by modified the latent space Improved training speed, convergence speed and higher resolution.

Hanzi Typeface Research with Conditional Generative Adversarial Network

2017

Poster of Taiwan Society for Industrial and Applied Mathematics Annual Meeting.

Using autoencoder and conditional GAN to embed font in \mathbb{R}^n latent space.

Advisor: Prof. Yen-Lung Tsai.

APPOINTMENTS

Academia Sinica, Taiwan

March, 2024 -

Research Assistant

Working on the generative model at the Research Center for Information Technology Innovation (CITI) with Dr. Jun-Cheng Chen.

Submitted two papers on generative models and cross-modality integration to top-tier conferences as the first author and second author.

Microsoft AI R&D Center, Taiwan

March, 2022 - November, 2022

Software Engineer Intern

Investigating vision transformer(ViT) as a backbone of perceptual loss and found that the task whether texture-driven or context-driven could affect the performance of the image-to-image translation model trained with ViT or ConvNet as the backbone of perceptual loss, working with SunDa Yang, Chien-Yi Wang, Prof. Shang-Hong Lai, Dr. Trista Chen, and the face science team.

National Chiao Tung University

September, 2018 - September, 2019

Research Assistant

Published the paper, Self-Contained Stylization via Steganography for Reverse and Serial Style Transfer, as co-first author in WACV2020, work on style transfer and generative model with Prof. Wei-Chen Chiu.

The First Step of AI and Deep Learning with Python

July, 2018 - September, 2018

Teaching Assistant

The MOOCs of National Chengchi University.

Writing the cue for video cut and additional tips and solving students' problems by online and offline. Teacher is Prof. Yen-lung Tsai.

InQtech Co.,Ltd
Deep Learning Scientist

September, 2017 - June, 2018

InQtech is AI and AIOT startup for deploying AI in manufacturing industry.
Investigating PCB segmentation by using semi-supervised GAN model to segment PCB for assembling.

The First Step of Data Analysis with Python
Teaching Assistant

September, 2017 - January, 2018

The MOOCs of National Chengchi University. Writing the cue for video cut and additional tips and solving students' problems by online and offline. Teacher is Prof. Yen-lung Tsai.

Leopard Mobile
intern

July-September, 2017

Data analysis in CM Security commerce realization team. Predicting user behavior prediction with deep learning model

NCCU Deep Learning & TWSIAM Student Group
Member

January, 2017-January, 2018

Winning **first** place of study group final presentation in NCCU. Hosting discussion about GAN.

TECHNICAL SKILL

Computer Languages	Python
Deep Learning related	PyTorch, AzureML, PEFT, Accelerate
Computer Vision related	OpenCV, Diffusers
Data Science related	Pandas, Mathplotlib, scikit-learn
Tools	VS code, Jupyter Lab & Notebook, Vim, Bash, Linux
Others	Film Photography, Typography, Pitching, Curation