Chin-Chia (James) Yang

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Education

National Taiwan University (NTU), Taipei, Taiwan
Non-degree, Graduate Institute of Communication Engineering   Sep. 2021-Nov. 2022
Bachelor, Electrical Engineering, Dept. of Electrical Engineering   Sep. 2017-June 2021
- Overall GPA: 3.64/4.30, Last 2-year GPA: **3.90**/4.30
- Research Topics: Light Field Synthesis, Semantic Segmentation, Image Denoising
- Coursework: Deep Learning for Computer Vision (A+), Computer Vision (A), Machine Learning Techniques (A), Digital Visual Effects (A+), Digital Image Processing (A-), Computer Networks (A+), Algorithms (A), Data Structure (A+), Linear Algebra (A+), Computer Programming (A-)

Research Experience

Communication and Multimedia Lab, NTU, Taipei, Taiwan   Apr. 2022-Oct. 2022
Research Assistant, Advisor: Prof. Yung-Yu Chuang
- Collaborated industry-academia projects between NTU and ASUS
- Refined SOTA semantic segmentation models and improved the performance
- Developed image denoising algorithm with realistic noise level estimation

Multimedia Processing and Communications Lab, NTU, Taipei, Taiwan   Sept. 2021-Mar. 2022
Research Assistant, Advisor: Prof. Homer H. Chen
- Developed DL-based light field video synthesizer with temporal consistency
- Experienced in the automatic calibration algorithm for near-eye light field display

Work Experience

Microsoft Taiwan, Department of Computer Vision
Research Intern   Aug. 2021-Feb. 2023
- Researched aggregation algorithm for zero-shot face anti-spoofing with linguistic model features
- Conducted penetration test on anti-spoofing systems; identified weaknesses and proposed improvement directions
- Provided comprehensive collection and precise annotation datasets for training and testing
- Supported various tasks for the teams to develop real-world products

National Taiwan University, Department of Electrical Engineering   Sept. 2022-Dec. 2022
Leading Teaching Assistant of five TAs (Course: Linear Algebra)
- Volunteered as leading teaching assistant to give back to the student community
- Led study sessions to support students who experienced academic struggles

National Taiwan University, Department of Electrical Engineering   Mar. 2022-June 2022
Teaching Assistant (Course: Data Structure)
- Supported students who were unfamiliar with programming to help them catch up with the class

National Taiwan University of Sport
Research Assistant   July 2020-Aug. 2020
- Designed algorithm for baseball spin rate estimation and 3D motion detection
- Developed algorithm for batting outcome prediction based on baseball exit velocity

Publication

Chin-Chia Yang*, Yi-Chou Chen, Shan-Ling Huang, and Homer H. Chen (*first author)
"Disparity-Guided Light Field Video Synthesis with Temporal Consistency"
IEEE Conference on Multimedia Information Processing and Retrieval, Aug. 2022

Skills

Proficient: C/C++, Python, Pytorch, OpenCV
Familiar: MATLAB, JavaScript, Tensorflow

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Honors & Awards

First Place out of 20+ teams, Face Anti-Spoofing Competition. [Microsoft]   Jan. 2021
FRANK: FeatuRe Anti-spoofing NetworK
- Proposed feature disentanglement network to improve the generalizability of face anti-spoofing
- Achieved an **8%** increase in accuracy rate and reached **first place** on the Kaggle leaderboard

First Place out of 10+ teams, Online Game Design Competition. [NTU EE]   June 2020
Go-kart online game (Course: Computer Networks)
- Developed Go-kart online game with fancy racetracks and multiple interesting obstacles
- Supported smooth gaming experience with up to **12** players connected simultaneously

Technical Projects

Few-shot image classification on Omniglot   Python, Pytorch
Course: Machine Learning   Mar. 2022-June 2022
- Finetuned Model-Agnostic Meta-Learning algorithm for few-shot image classification
- Achieved **top 8%** percent performance on Kaggle leaderboard with nearly 200 competitors

Video stabilization   Python, Pytorch
Course: Digital Image Processing   Sept. 2021-Dec. 2021
- Designed motion/pose history smoothing with LSTM using simulated metadata
- Optimized the algorithm and utilized only **50%** of data to achieve real-time stabilization

Video frame interpolation   Python, Pytorch
Course: Computer Vision   Mar. 2021-June 2021
- Up-converted the video fps from **24 to 60** by optical flow estimation and consistent warping loss
- Refined flickering effect with novel filtering techniques

HDR imaging   Python, OpenCV
Course: Digital Visual Effects   Mar. 2021-June 2021
- Implemented multi-scale image alignment algorithm and Debevec's algorithm for HDR creation
- Investigated different algorithms for tone mapping

Image stitching   Python, OpenCV
Course: Digital Visual Effects   Mar. 2021-June 2021
- Implemented SIFT algorithm for feature detection and matching
- Experimented with different blending techniques

NTU EEAT   JavaScript
Course: Web Programming   Sept. 2020-Dec. 2020
- Deployed web application for users to share restaurants around NTU and leave comments
- Built query systems for users to search restaurants of their interest

AICUP mango classification competition   Python, Pytorch
Course: Machine Learning Techniques   Mar. 2020-June 2020
- Implemented deep neural networks to classify mangoes into three classes
- Reached **top 25%** performance in the AICUP mango classification competition

Leadership and Extracurricular Activity

NTU Electrical Engineering Departmental Baseball Team
Vice-Captain   Sept. 2019-June 2020
- Led members to outcompete others and won top eight teams in the Freshman Cup tournament

NTU Yunlin & Chiayi Association
Vice Convener   Sept. 2018-June 2019
- Planned, organized, and hosted various to increase the bond between students