Yunhao Liu

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EDUCATION

Technical University of Munich

• Major in Informatics

Dalian University of Technology

- Major in Computer Science and Technology
- GPA: 3.91 (91.1/100)

PUBLICATIONS

Effective Adapter for Face Recognition in the Wild

Yunhao Liu, Lu Qi, Yu-Ju Tsai, Xiangtai Li, Kelvin C.K. Chan, Ming-Hsuan Yang 2023

- We introduce a novel framework that simultaneously processes both low-quality and high-quality images, effectively bridging the gap between different image domains.
- We propose using existing face recognition models trained on high-quality datasets as the pre-trained backbone, allowing the model to adapt to low-quality images without training from scratch readily.
- Through extensive experiments, we devise nested Cross-Attention and Self-Attention mechanisms, enhancing the accuracy and reliability of the recognition process in the wild.

EXPERIENCE

Guided Research Oct. 2023 - Present Mentor: Dr. Tobias Kirschstein, Dr. Simon Giebenhain Visual Computing and AI Group, TUM • Research on 3D Vision, specifically Multi-View Stereo via Inverse Rendering.

Undergraduate Research Intern

Mentor: Prof. Ming-Hsuan Yang, Dr. Lu Qi Vision and Learning Lab, UC Merced

• Research on high-level computer vision, specifically Face Recognition.

Guided Research

GEARS Program, NC State University

• Research on an NLP application task, specifically using a seq2seq generation model to assess the factuality of system-generated feedback.

Undergraduate Research Intern

IIAU Lab, Dalian University of Technology

- Research on high-level computer vision, specifically Object Detection.
- Project: Underwater Robotics Vision In order to enhance robot underwater object detection, we employ Two-Stage (detectoRS) and One-Stage (YOLOX) Object Detection Algorithms for optimal accuracy and speed. We also implement advanced training techniques including data mosaic, mixup, and multi-scale training, and develop methods for detecting tiny and overlapping underwater objects.

Undergraduate Research Intern

ICCD Lab, Dalian University of Technology

- Research on a vision application task, specifically vision algorithms for UAV Obstacle Avoidance.
- Project: UAV Automatic Traversing System for Ring Obstacles

Munich, Germany 2023 - 2024

Arxiv Preprint (**Under Review**)

Dalian, China 2020 - 2023

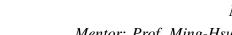
Jul. 2023 - Sep. 2023

Mentor: Prof. Edward F. Gehringer, Dr. Qinjin Jia

Sep. 2021 - Nov. 2021 Mentor: Prof. Xin Yang

May. 2021 - Apr. 2023

Mentor: Prof. Huchuan Lu



May. 2023 - Present

• We develop a UAV Automatic Traversing System for ring obstacles, incorporating a custom-built F450(330) drone with a Nvidia NX onboard computer. We design and implement an obstacle-passing algorithm using YOLOV5 and OpenCV, and execute UAV flight path planning on Unreal Engine 4 (UE4), finally achieving automatic traversing of ring obstacles through the integration of these algorithms with the physical drone.

HONORS AND AWARDS

Third Prize 2021 China Intelligent UAV Racing Championship (rk.7)	2021
Third Prize 2021 China Underwater Robot Professional Contest - Optics Track (rk.9)	2021
Technology Innovation && Learning Excellence Scholarship, DUT (Top 5%)	2021, 2022, 2023

SELECTED COURSES

Applying Machine Learning to Engineering and Science (MIT) [Certificate]Master Seminar 3D Vision (TUM)3D Scanning & Spatial Learning (TUM)

Skills

- Programming Languages: Python, C/C++, MATLAB, Verilog, assembly x86
- Tools: Git, Docker, OpenCV, PyTorch, HuggingFace, CUDA