Yunhao Liu

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Education

Technical University of Munich   Munich, Germany
- Major in *Informatics*   *2023 - 2024*

Dalian University of Technology   Dalian, China
- Major in *Computer Science and Technology*   *2020 - 2023*
- **GPA: 3.91** (**91.1**/100)

Publications

Effective Adapter for Face Recognition in the Wild   *Arxiv Preprint (**Under Review**)*

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

Undergraduate Research Intern   *May. 2023 - Present*
Vision and Learning Lab , UC Merced   Mentor: Prof. Ming-Hsuan Yang , Dr. Lu Qi
- Research on high-level computer vision, specifically Face Recognition.

Guided Research   *Jul. 2023 - Sep. 2023*
GEARS Program, NC State University   Mentor: Prof. Edward F. Gehringer, Dr. Qinjin Jia
- Research on an NLP application task, specifically using a seq2seq generation model to assess the factuality of system-generated feedback.

Undergraduate Research Intern   *May. 2021 - Apr. 2023*
IIAU Lab, Dalian University of Technology   Mentor: Prof. Huchuan Lu
- 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   *Sep. 2021 - Nov. 2021*
ICCD Lab, Dalian University of Technology   Mentor: Prof. Xin Yang
- Research on a vision application task, specifically vision algorithms for UAV Obstacle Avoidance.
- ***Project***: *UAV Automatic Traversing System for Ring Obstacles*

- 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