Jingtong (Stacy) Yue

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Education

Carnegie Mellon University (CMU) Pittsburgh, PA
Master of Science in Computer Vision *Dec. 2026*

Sichuan University Chengdu, China
Bachelor of Engineering in Electronics and Information Engineering | GPA: 3.87/4.0 *Jul. 2025*

Skills

Programming Languages: Python, C, C++, Javascript, Java, Bash/PowerShell, MATLAB
Tools and Frameworks: Docker, Git, Linux
Machine Learning: PyTorch, TensorFlow, OpenCV, scikit-learn, mmdetection3D

Research Experience

Robust Radar-Camera Fusion 3D Detection *Peking University & UC Merced | May. 2024 – Oct. 2024*

- Conducted a systematic analysis on the robustness of radar-camera 3D object detection, identifying 4 key types of radar corruptions. Developed a benchmark by simulating radar noises for robust 3D object detection evaluation
- Proposed RobuRCDet, a robust detector designed to handle adverse weather and radar corruption, achieving a 19.4% improvement in NDS and a 25.7% improvement in mAP in noisy conditions
- Designed a 3D Gaussian Expansion module to emphasize key points and reduce noise impact, alongside a Confidence-guided Multi-modal Cross-Attention module for enhanced multi-modal fusion

Towards Video Generation to World Model *MMLab@NTU | Feb. 2025 – present*

- Proposed a 4 generation taxonomy for the evolution of video generation towards world models, grounded in 3 world model's core capabilities, faithfulness, interactiveness, and planning and 20+ detailed capabilities.
- Surveyed and categories 300+ paper in 4 generations, marking the evolution of development level from video generation towards world modeling, and defined 2 key terms, world model and navigation model.
- Discussed the key capabilities that must be achieved for video generation models to evolve into fully-fledged world models, offering insights for future research direction and challenges.
- Maintaining an up-to-date list of advanced works in github repo at: Awesome- From-Video-Generation-to-World-Model.

Projects

Deep-Learning-Based Auto-Patrolling Robot *NUS SOCSWS | May. 2023 – Aug. 2023*

- Developed a cyber-police robot capable of navigating complex indoor environments (eg. intersection, corner, wall corner, unknown obstacle)
- Innovated a real-time intersection detection algorithm based on depth estimation model, achieving a 12% improvement in accuracy and 3% reduction in latency
- Implemented a security personnel authentication system using facial recognition model
- Built a hardware system based on Raspberry Pi, integrating dual ultrasonic sensors and infrared sensors for precise long-range and short-range obstacle avoidance, achieving a 5% reduction in latency

Multi-function Image Restoration App *SCU Competition | Mar. 2024 – Jun. 2024*

- Applied model compression techniques such as pruning and INT8 quantization, reducing model parameters by 8%~10%, for denoising, crack repair, super-resolution, and old photo restoration respectively
- Developed an Android-based platform integrating various image restoration functions powered by deep learning models, while also porting the YOLOv5 model to enable real-time detection

Publications

(* indicates equal contribution)

RobuRCDet: Enhancing Robustness of Radar-Camera Fusion in Bird's Eye View for 3D Object Detection
Jingtong Yue*, Zhiwei Lin *, Xin Lin *, Xiaoyu Zhou, XiangtaiLi, Lu Qi, Yongtao Wang and Ming–Hsuan Yang*
Accepted by International Conference on Learning Representations (ICLR) 2025 [paper][code]

Dual-Representation Interaction Driven Image Quality Assessment with Restoration Assistance
Jingtong Yue*, Xin Lin, Zijiu Yang and Chao Ren*
Accepted by IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2025 [paper][code]

Dual Degradation Representation for Joint Deraining and Low-Light Enhancement in the Dark
*Xin Lin *, **Jingtong Yue***, Sixian Ding, Chao Ren, Lu Qi and Ming–Hsuan Yang*
Accepted by IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) 2024 [paper][code]

Re-boosting Self-Collaboration Parallel Prompt GAN for Unsupervised Image Restoration
*Xin Lin *, Yuyan Zhou *, **Jingtong Yue**, Chao Ren, Kelvin C.K. Chan, Lu Qi and Ming–Hsuan Yang*
Accepted by IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) [paper][code]