

Adil Karjauv

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EDUCATION

- **KAIST, Robotics and Computer Vision (RCV) Lab** Daejeon, Republic of Korea
Master of Science in Electrical Engineering Sep. 2019 – Jun. 2021
- **KAIST** Daejeon, Republic of Korea
Bachelor of Science in Computer Science Sep. 2014 – Feb. 2019

EXPERIENCE

- **Qualcomm AI Research** Amsterdam, Netherlands
Researcher Oct. 2022 – Present
 - Conducting research on efficient video processing and video generative AI:
 - Significantly contributed to the first on-device deep-learning-based video denoising solution at high resolution (QHD and 4K at 30FPS). One patent filed.
 - Significantly contributed to two papers (one accepted at ECCV 2024 and the other one is under review) and two patents on efficient video diffusion models.
 - Significantly contributed to the fastest diffusion-based mobile video editing demo on-device (presented at NeurIPS 2024).

Technology Stack: Python, PyTorch.
- **Robotics and Computer Vision (RCV) Lab** Daejeon, Republic of Korea
Researcher Sep. 2019 – Jan. 2022
 - Conducted research on machine learning and computer vision with a focus on adversarial machine learning and its applications in multimedia:
 - Improved hiding capacity of robust deep hiding by x30 times over SOTA.
 - Increased data-free universal attack fooling ratio from 73.59% (SOTA) to 84.08% in the white-box scenario and transferability of the attack from 39.05% (SOTA) to 56.96%.

Technology Stack: Python, PyTorch, TensorFlow, NumPy, OpenCV.
- **Crazing Lab** Seoul, Republic of Korea
Robotics Research Engineer Apr. 2019 – July 2019
 - **Robotic Vision System:** Developed a robotic vision system based on several CSI cameras and NVIDIA embedded computer (Jetson Xavier). Used a low-level camera API and GStreamer framework to configure cameras. Designed and implemented algorithms for a real-time cylindrical panorama projection for the system.

Technology Stack: Python, C++, NumPy, OpenCV, ROS, Libargus Camera API, GStreamer.

SELECTED PUBLICATIONS

- **Adil Karjauv**^{*}, Noor Fathima^{*}, Ioannis Lelekas, Fatih Porikli, Amir Ghodrati, Amirhossein Habibian (*Equal contribution), “MoViE: Mobile Diffusion for Video Editing”, **under review**.
- Kumara Kahatapitiya, **Adil Karjauv**, Davide Abati, Fatih Porikli, Yuki M. Asano, Amirhossein Habibian, “Object-Centric Diffusion for Efficient Video Editing”, in **ECCV 2024**.
- Chaoning Zhang, Philipp Benz, **Adil Karjauv**, Jae Won Cho, Kang Zhang, In So Kweon, “Investigating Top-*k* White-Box and Transferable Black-box Attack”, in **CVPR 2022**.
- Chaoning Zhang^{*}, **Adil Karjauv**^{*}, Philipp Benz^{*}, In So Kweon (*Equal contribution), “Towards Robust Deep Hiding Under Non-Differentiable Distortions for Practical Blind Watermarking”, in **ACM MM 2021**.
- Chaoning Zhang^{*}, Philipp Benz^{*}, **Adil Karjauv**^{*}, In So Kweon (*Equal contribution), “Data-free Universal Adversarial Perturbation and Black-box Attack”, in **ICCV 2021**.
- Chaoning Zhang^{*}, Philipp Benz^{*}, **Adil Karjauv**^{*}, Geng Sun, In So Kweon (*Equal contribution), “UDH: Universal Deep Hiding for Steganography, Watermarking, and Light Field Messaging”, in **NeurIPS 2020**.