Kang Changwoo

kangchangwoo@unist.ac.kr | branden.c.w.kang@gmail.com

Linkedin | Github

Objective

My research focuses on 3D shape generation of objects, humans, and animals. Currently, I am exploring multimodal fusion, aiming to integrate complementary visual cues from different sensors and modalities. In particular, I focus on event camera-based vision, and am interested in leveraging RGB-trained models for accurate and low-latency 3D perception under challenging conditions.

Education

- **Ulsan National Institute of Science and Technology, UNIST** *Mar. 2021 - Present*
  Integrated M.S. & Ph.D., Electrical Engineering (Advisor: Prof. Kyung-Don Joo) Ulsan, Korea

Projects

- **이벤트 카메라 기반 3D 공간인지 센서팩 개발** *Sep. 2024 – Aug. 2029*
  National Research Foundation of Korea (NRF)
  ◦ Developing a 3D perception sensor pack using event cameras for heterogeneous agents.
- **상식 기반 사실 추론 인공지능 기술 개발** *Apr. 2022 – Dec. 2026*
  Institute for Information & Communications Technology Planning & Evaluation (IITP)
  ◦ Developing AI models capable of reasoning new facts grounded in everyday common sense.
- **스테레오 기반 깊이방향 진동분석 장치 개발** *Nov. 2022 – May 2023*
  Research Institute of Industrial Science and Technology (RIST)
  ◦ Developed a stereo camera-based system for depth-direction vibration analysis in industrial applications.
- **가상 촉각 피드백 모델 연구** *Jan. 2022 – Dec. 2023*
  Ulsan National Institute of Science and Technology (UNIST)
  ◦ Developed a personalized recommendation system that adjusts virtual tactile feedback based on hand pressure.

Publications

C=Conference, J=Journal, S=In Submission, T=Thesis

[S.1] **3D Human Generation for Partners**.

[S.2] **Visual Inertial Odometry**.

[S.3] **Event-based Calibration**.

[S.4] **Animal Video Dataset**.

[J.1] Gyeongsu Cho, **Changwoo Kang**, Donghyeon Soon, Kyungdon Joo. (2025). **DogRecon: Canine Prior-Guided Animatable 3D Gaussian Dog Reconstruction From a Single Image**. *International Journal of Computer Vision (Online First)*. DOI:10.1007/s11263-025-02485-5.

[C.4] Gyeongsu Cho, **Changwoo Kang**, Donghyeon Soon, Kyungdon Joo. (2025). **Canine Prior-Guided Animatable 3D Gaussian Dog Reconstruction From a Single Image**. *CVPR Workshop on Computer Vision for Animals (CV4Animals)*.

[C.3] Dongjun Gu, Jaehyeok Shim, **Changwoo Kang**, Jaehoon Jang, Kyungdon Joo. (2024). **ContactGen: Contact-Guided Interactive 3D Human Generation for Partners**. In *Proceedings of the Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI '24)*, pp. 2370–2379. AAAI Press. February 25, 2024, Vancouver, Canada. DOI: 10.1609/aaai.v38i3.27962.

[C.2] Jaehyeok Shim, **Changwoo Kang**, Kyungdon Joo. (2023). **Diffusion-Based Signed Distance Fields for 3D Shape Generation**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2023)*, pp. 20887–20897. IEEE/CVF. June 18–22, 2023, Vancouver, Canada. DOI: 10.1109/CVPR52729.2023.02001.

[C.1] Minseok Kim, **Changwoo Kang**, Jeongin Park, Kyungdon Joo. (2023). **Pose-Guided 3D Human Generation in Indoor Scene**. In *Proceedings of the Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023)*, Vol. 37(1), pp. 1133–1141. AAAI Press. February 7–14, 2023, Washington, D.C., USA. DOI: 10.1609/aaai.v37i1.25195.