Yuhwan Jeong

PhD candidate in KAIST
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Personal Data

- **Birth / Nationality:** 28th January, 1998 / Republic of Korea
- **Language:** Korean (First language), English

Education

- **Korea Advance Institute of Science and Technology (KAIST)** March 2024 – Present
  Ph.D candidate in Mechanical Engineering (GPA: 3.89/4.3) Daejeon, South Korea
  Advisor: Kuk-Jin Yoon
- **Korea Advance Institute of Science and Technology (KAIST)** March 2022 – February 2024
  M.S. in Mechanical Engineering (GPA: 3.96/4.3) Daejeon, South Korea
  Advisor: Kuk-Jin Yoon
- **Korea Advance Institute of Science and Technology (KAIST)** March 2017 – February 2022
  B.S. in Mechanical Engineering (GPA: 3.75/4.3) Daejeon, South Korea
- **Gyeonggibuk Science High School** March 2014 – February 2017
  Graduation Uijeongbu, South Korea

Experience

- **Inbody** August 2020 - February 2021
  Co-op KAIST Intern Seoul, South Korea
  – Human skeleton prediction using deep learning-based vision models
  – Motion estimation from camera data
- **KAIST Times** October 2017 - June 2020
  Photo Journalist & Associate Editor Daejeon, South Korea

Research Interest

- **Computer Vision and Machine Learning**
  – Optical Flow
  – Video Diffusion Models
  – Novel Sensors (Event Camera, LiDAR, RADAR)
  – Image Restoration & Video Restoration
  – Multi-Agent Reinforcement Learning

Publications

** Equal contribution*

- **Yuhwan Jeong***, Hoonhee Cho*, and Kuk-Jin Yoon, "Controllable Event-Guided Diffusion for Motion Blur Synthesis with Additional Blur-Free Data," Pre-print, 2026.
- **Yuhwan Jeong***, Hyeonseong Kim*, Daehyun We*, Seonkyu Song*, Jinnyeong Yang*, Hyun-Kurl Jang, Youngho Yoon, and Kuk-Jin Yoon, "FrozenDrive: Zero-Shot Text-Guided Driving Scene Generation and Data Augmentation with Parameter-Free Frozen Diffusion Model," Pre-print, 2026.
- Hoonhee Cho*, **Yuhwan Jeong***, and Kuk-Jin Yoon, "Event-based Motion Deblurring with Unpaired Data," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026. (Highlight Paper)
- Hoonhee Cho*, Jae-Young Kang*, **Yuhwan Jeong***, Yunseo Yang, Wonyoung Lee, Youngho Kim, and Kuk-Jin Yoon, "DSERT-RoLL: Robust Multi-Modal Perception for Diverse Driving Conditions with Stereo Event-RGB-Thermal Cameras, 4D Radar, and Dual-LiDAR," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026.

- **Yuhwan Jeong***, Yunseo Yang*, Youngho Yoon*, and Kuk-Jin Yoon, "Robust Adverse Weather Removal via Spectral-based Spatial Grouping," IEEE/CVF International Conference on Computer Vision (ICCV), 2025.
- Hoonhee Cho*, **Yuhwan Jeong***, and Kuk-Jin Yoon, "Learning Large Motion Estimation from Intermediate Representations with a High-Resolution Optical Flow Dataset Featuring Long-Range Dynamic Motion," IEEE/CVF International Conference on Computer Vision (ICCV), 2025. (Highlight Paper, 2.36%)
- Hoonhee Cho, Jae-Young Kang, Taewoo Kim, **Yuhwan Jeong**, and Kuk-Jin Yoon, "Unifying Low-Resolution and High-Resolution Alignment by Event Cameras for Space-Time Video Super-Resolution," IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2025.
- Hoonhee Cho*, Taewoo Kim*, **Yuhwan Jeong**, and Kuk-Jin Yoon, "A Benchmark Dataset for Event-guided Human Pose Estimation and Tracking in Extreme Conditions," Advances in Neural Information Processing Systems (NeurIPS), 2024.
- Taewoo Kim, Jaeseok Jeong, Hoonhee Cho, **Yuhwan Jeong**, and Kuk-Jin Yoon, "Towards Real-world Event-guided Low-light Video Enhancement and Deblurring," European Conference on Computer Vision (ECCV), 2024.
- **Yuhwan Jeong***, Hoonhee Cho*, and Kuk-Jin Yoon, "Towards Robust Event-based Networks for Nighttime via Unpaired Day-to-Night Event Translation," European Conference on Computer Vision (ECCV), 2024.
- Hoonhee Cho, Taewoo Kim, **Yuhwan Jeong**, and Kuk-Jin Yoon, "TTA-EVF: Test-time Adaptation for Event-based Video Frame Interpolation via Reliable Pixel and Sample Estimation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
- Hoonhee Cho, **Yuhwan Jeong**, Taewoo Kim, and Kuk-Jin Yoon, "Non-coaxial Event-guided Motion Deblurring with Spatial Alignment," IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

Research Experiences

- **Project Leader** December 2024 – December 2025
  Development of Data Augmentation and Sensor Fusion Technologies for Robust Autonomous Driving
  Funded by 42DOT
- **Project Member** March 2022 – February 2026
  Computer Vision Research Based on Multimodal Cameras for Robust Autonomous Driving
  Funded by the Korea Government (MSIT)
- **Project Member** March 2022 – February 2024
  Development of a Humanoid Robot Pilot Based on Natural Language Processing Knowledge Base
  Funded by Agency for Defense Development (ADD)
- **Project Member** March 2022 - January 2023
  Future Mobility Testbed Development through IT, AI, and Robotics
  Funded by KAIST Institute

Extracurricular Activities

- **Teaching Assistant** Spring 2026
  Optimal Design
- **Teaching Assistant** Spring 2025
  Introduction to Visual Intelligence
- **Teaching Assistant** Fall 2024, Fall 2025
  Autonomous Mobile System Programming
- **Teaching Assistant** August 2024
  Samsung AI Expert
- **Teaching Assistant** Spring 2024
  Special Topics in Mechanical Engineering Practice <Programming for Mechanical Engineering Problem Solving>

Honors and Awards

- **Vice President of the Doctoral Programme** 2026
  Department of Mechanical Engineering, KAIST
- **Lab Leader Student** 2026
  Visual Intelligence Lab, KAIST
- **Mohamed Bin Zayed International Robotics Challenge (MBZIRC) Final Team** December 2022
  The Mohamed Bin Zayed International Robotics Challenge (MBZIRC) aims to be one of the world's largest and most prestigious international robotics competitions.
  https://www.mbzirc.com/
- **Cum Laude, KAIST** 2022

Academic Services

- 2025 IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- 2025 International Conference on Computer Vision (ICCV)
- 2025 Neural Information Processing Systems (NeurIPS)
- 2026 IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR)