

Younggun Kim

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RESEARCH INTERESTS & APPROACHES

- 1) **Research Interests:** Cyber-Physical Systems, System-Level Transportation Optimization, Autonomous Vehicle Fleet Management
- 2) **Approaches:** Deep Learning, Multimodal Learning, Reinforcement Learning, Convex Optimization

EDUCATION

University of California, Los Angeles (UCLA), CA, U.S.

Sept. 2026 - Aug. 2030

- ✓ Doctor of Philosophy in Civil Engineering
- ✓ **Advisor:** [Dr. Youngseo Kim](#)

University of Central Florida, FL, U.S.

Aug. 2024 - Dec. 2025

- ✓ Master of Science in Civil Engineering [GPA: 4.0/4.0]
- ✓ **Advisor:** [Dr. Mohamed Abdel-Aty](#)
- ✓ **Selected Coursework:** *Advanced Computer Vision; Machine Learning; Computer Vision; Connected Autonomous Vehicles; Algorithms and Models for Smart Cities; Data Mining*

Ajou University, Suwon, South Korea

Mar. 2018 - Feb. 2024

- ✓ Bachelor of Science in Mechanical Engineering [GPA: 4.28/4.5 (3.9/4.0) (top 2%)]
- ✓ **Selected Coursework:** *Fundamental of Machine Learning; Numerical Analysis and Machine Learning; Data Structure; Industrial Robotics; Automotive Engineering; System Dynamics*

PUBLICATIONS (* and † indicate corresponding authors and equal contributions, respectively.)

Accepted Publications (incl. minor revision)

- [1] [Safe-LLaVA: A Privacy-Preserving Vision-Language Dataset and Benchmark for Biometric Safety](#)
 - ✓ [Younggun Kim](#)[†], Swetha Sirnam[†], Fazil Kagdi, and Mubarak Shah
 - ✓ *IEEE/CVF Computer Vision and Pattern Recognition Findings (CVPR Findings)*, 2026.
- [2] [Multi-view Structural Convolution Network for Domain-Invariant Point Cloud Recognition of Autonomous Vehicles](#)
 - ✓ [Younggun Kim](#), Mohamed Abdel-Aty, Beomsik Cho, Seonghoon Rhoo, and Soomok Lee*
 - ✓ **Minor Revision** at *IEEE Transactions on Intelligent Vehicles*, 2026. [Impact Factor: 14.3, JCR Quartiles: Q1]
- [3] [Region-Level Vision-Language Model for Detecting Distraction Behaviors and Mobility Attributes of Vulnerable Road Users](#)
 - ✓ Dai Quoc Tran*, Mohamed Abdel-Aty, [Younggun Kim](#), Ahmed Abdelrahman, and Zybayer Islam
 - ✓ *IEEE Transactions on Intelligent Transportation Systems*, 2026. [Impact Factor: 8.4, JCR Quartiles: Q1]
- [4] [VRU-Accident: A Vision-Language Benchmark for Video Question Answering and Dense Captioning for Accident Scene Understanding](#)
 - ✓ [Younggun Kim](#), Ahmed Abdelrahman*, and Mohamed Abdel-Aty
 - ✓ *International Conference on Computer Vision Workshop (ICCVW)*, 2025. [**Oral, Best Student Paper Award**]
- [5] [Pedestrian Crossing Direction Prediction at Intersections for Pedestrian Safety](#)
 - ✓ [Younggun Kim](#)*, Mohamed Abdel-Aty, Keechoo Choi, Zubayer Islam, Dongdong Wang, and Shaoyan Zhai
 - ✓ *IEEE Open Journal of Intelligent Transportation Systems*, 2025. [Impact Factor: 5.3, JCR Quartiles: Q1]
- [6] [3D Adaptive Structural Convolution Network for Domain-Invariant Point Cloud Recognition](#)
 - ✓ [Younggun Kim](#) and Soomok Lee*
 - ✓ *Asian Conference on Computer Vision (ACCV)*, 2024.

Under Review & arXiv Preprint

- [1] [MMCAformer: Macro-Micro Cross-Attention Transformer for Traffic Speed Prediction with Microscopic Connected Vehicle Driving Behaviors](#)
 - ✓ Lei Han*, Mohamed Abdel-Aty, [Younggun Kim](#), Yang-Jun Joo, and Zybayer Islam
 - ✓ Under review at *IEEE Transactions on Intelligent Transportation Systems*. [Impact Factor: 8.4, JCR Quartiles: Q1]
- [2] [Gated Kinematic-Visual Fusion for Right-Turn Pedestrian Conflict Risk Assessment](#)
 - ✓ Dai Quoc Tran*, Mohamed Abdel-Aty, Qianqian Jin, [Younggun Kim](#), Zubayer Islam, Seunghee Park
 - ✓ Under review at *IEEE Transactions on Intelligent Transportation Systems*. [Impact Factor: 8.4, JCR Quartiles: Q1]

PROFESSIONAL SERVICES

- [1] **Reviewer**, *Science of Remote Sensing*, 2025.
- [2] **Reviewer**, *Transportation Research Board Annual Meeting*, 2025. (**5 times**)
- [3] **Reviewer**, *IEEE Open Journal of Intelligent Transportation Systems*, 2025.
- [4] **Reviewer**, *International Conference on Computer Vision Workshop (ICCVW)*, 2025.

CONFERENCE PRESENTATIONS

- [1] **Younggun Kim**[†], Swetha Sirnam[†], Fazil Kagdi, and Mubarak Shah, “Safe-LLaVA: A Privacy-Preserving Vision-Language Dataset and Benchmark for Biometric Safety”, *IEEE/CVF Computer Vision and Pattern Recognition Findings (CVPR Findings)*. **Jun. 2026**
- [2] **Five papers** (including two as first authors and three as co-authors) were accepted at *105th Transportation Research Board Annual Meeting*. **Jan. 2026**
- [3] **Younggun Kim**, Ahmed Abdelrahman*, and Mohamed Abdel-Aty, “VRU-Accident: A Vision-Language Benchmark for Video Question Answering and Dense Captioning for Accident Scene Understanding”, *International Conference on Computer Vision Workshop (ICCVW)*. **Oct. 2025**
[Oral, Best Student Paper Award]
- [4] **Younggun Kim** and Soomok Lee* “3D Adaptive Structural Convolution Network for Domain-Invariant Point Cloud Recognition”, *the Asian Conference on Computer Vision (ACCV)*, 2024. **[BK21(Brain Korea) Distinguished Conference Paper List]** **Dec. 2024**
- [5] **Younggun Kim**, Yooseong Lee, Uikyum Kim*, “Design of capable of Grasping and Manipulating Various objects”, *17th Korean Robotics Society Annual Conference (KROS)*. **May. 2022**
[Oral, Best Paper Award]

PATENTS

- Younggun Kim**, Minjoung Sim, Hojun Lee, Wonjun Choi, and Hanbin Choi, Intelligent cradle for a device (Patent No. 10-2506732, KR) **Mar. 2023**

AWARDS AND SCHOLARSHIPS

- UCLA Graduate Student Researcher Funding** **Sept. 2026 - Aug. 2030**
Fully funded by the University of California, Los Angeles, covering tuition, insurance, and stipend.
- UCF Research Assistantship** **Aug. 2024 - Dec. 2025**
Fully funded by the University of Central Florida, covering tuition, insurance, and stipend.
- Best Student Paper Award** **Oct. 2025**
Oral presentation, 2COOOL Workshop, International Conference on Computer Vision (ICCV).
- Dean’s List: 4 times** **Jul. 2021 - Aug. 2023**
Ajou University, South Korea
Awarded to students ranked in the top 5% of the department based on semester GPA.
- University Scholarship: 7 times** **Sep. 2021 - Sep. 2023**
Ajou University, South Korea
- City Scholarship** **Jun. 2023**
Asan-si Future Scholarship Foundation, Asan-si, South Korea
Awarded to students who are expected to lead the 4th Industrial Revolution in the future
- 1st Place in the Patent Competition** **Jun. 2023**
Ajou University, South Korea
- University Scholarship (1 out of 637)** **Apr. 2023**
Daewoo Scholarship Foundation, Ajou University, South Korea
Awarded to a student ranked 1st in the College of Engineering based on semester GPA.

Best Paper Award

May. 2022

*Oral session, 17th Korean Robotics Society Annual Conference (KROS), South Korea***1st Place in College of Engineering Academic Club Competition**

Sep. 2018

*Ajou University, South Korea***TECHNICAL SKILLS**

[1] Specialties: Deep Learning, Computer Vision, Large Language Models, Dataset and Benchmark Curation**[2] Programming:** Python, C/C++, Matlab **[2] Framework:** Pytorch, OpenCV, HF Transformers **[3] OS:** Linux, Windows**[4] Analysis:** Ansys Workbench**[5] Manufacturing:** 3D printing, Laser cutting**[6] CAD:** SolidWorks**RESEARCH EXPERIENCES (First-author works)**

Research Collaboration (Advisor: Prof. Mubarak Shah)

Jan. 2025 - Jan. 2026

- Safe-LLaVA: Privacy-Preserving Vision-Language Dataset and Benchmark for Biometric Safety
- Originally developed as a coursework project (Jan. 2025 to May. 2025).
- Proposal for captioning and instruction fine-tuning dataset to protect biometric leakage from VLM.
- Proposal for a benchmark to thoroughly evaluate leakages of biometric information from VLMs.
- ✓ **Accepted at IEEE/CVF Computer Vision and Pattern Recognition Findings (CVPR Findings).**

Graduate Research Assistant (Advisor: Prof. Mohamed Abdel-Aty)

Aug. 2024 - Dec. 2025

Smart & Safe Transportation Laboratory, University of Central Florida, USA

- VRU-Accident: A Vision-Language Benchmark for Video Question Answering and Dense Captioning for Accident Scene Understanding
- Proposal of a large-scale benchmark comprising 1K VRU-related crash videos, 6K VQA questions with 24K candidate options, and 1K dense scene-level captions.
- Proposal of a semi-automatic benchmark curation pipeline to effectively generate VQA and Caption.
- ✓ **Accepted at International Conference on Computer Vision Workshop (ICCVW).**
- Pedestrian Crossing Direction Prediction at Intersections for Pedestrian Safety
- A novel transformer-based framework to predict future human crossing direction from CCTV.
- Proposal for Geometric-Invariant Space Embedding System to ensure pedestrian size-invariance, intersection geometric-invariance, and CCTV location-invariance.
- ✓ **Accepted at IEEE Open Journal of Intelligent Transportation Systems.**

Undergraduate Research Assistant (Advisor: Prof. Soomok Lee)

Nov. 2023 - Jul. 2024

Machine Learning & Mobility Laboratory, Ajou University, South Korea

- 3D Adaptive Structural Convolution Network for Domain-Invariant Point Cloud Recognition
- A novel deep learning network proposal for domain-invariant point cloud recognition
- Adaptive neighborhood sampling method proposal based on principal component analysis
- Experiments about intra-domain and cross-domain environments
- ✓ **Accepted at Asian Conference on Computer Vision (ACCV).**
- Multi-view Structural Convolution Network for Domain-Invariant Point Cloud Recognition of Autonomous Vehicles
- A new deep learning model, which is developed from ASCN, for domain-invariant PCD recognition
- 2D image-based domain generalization framework modification to adapt it to point clouds
- Proposal for a synthetic point cloud dataset from MORIA simulator
- ✓ **Minor revision at IEEE Transactions on Intelligent Vehicles.**

REFERENCES

Academic Advisors

Dr. Mohamed Abdel-Aty (Email: m.aty@ucf.edu)

- Trustees Chair Professor and Pegasus Professor, University of Central Florida, FL, U.S.
- Citations: 42,000+, H-index: 109
- Fellow of ASCE and ITE
- Editor-in-Chief Emeritus, *Accident Analysis & Prevention*

Dr. Mubarak Shah (Email: shah@crcv.ucf.edu)

- Trustee Chair Professor and Founding Director of the Center for Research in Computer Vision at UCF, FL, U.S.
- Citations: 112,200+, H-index: 147
- Fellow of IEEE, AAAS, IAPR, and SPIE
- Editor-in-Chief, *Machine Vision and Applications*

Dr. Soomok Lee (Email: slee337@kennesaw.edu)

- Assistant Professor, Department of Computer Science, Kennesaw State University, Georgia, U. S.

Career & Life Mentor

Dr. Keechoo Choi (Email: keechoo@ajou.ac.kr)

- President, Ajou University, Suwon, South Korea
- Founding Editor-in-Chief, *International Journal of Sustainable Transportation*