Yongseob Lim, Ph.D.

Curriculum Vitae

August 29, 2025

■ Research Interests

- Artificial Intelligent (AI) based autonomous driving and mobile robotic system dynamics and control.
- Deep learning-based perception and control techniques for autonomous vehicle in the presence of complex abnormal weather condition environments.
- AI based Path planning and tracking control algorithms for autonomous systems.
- Sensor fusion-based control algorithm for autonomous vehicle and flying robotic systems.
- Multi-Input Multi-Output (MIMO) dynamics and control, measurement and control in electronic and mechanical systems, dynamic system modeling and control design methodology (e.g., optimal control, auto-tuning, adaptive control, and gain scheduling).
- Model parameter estimation, system identification technique and model analysis in electronic and mechanical systems.

■ Personal

Born Feb. 4, 1973 in Changwon City in Korea: Married and having one son and one daughter.

Office Address

Department of Robotics and Mechatronics Engineering, College of Graduate Study
Daegu Gyeongbuk Institute of Science & Technology (DGIST)
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Lab: https://yslim73.wixsite.com/dgist-ascl

■ Academic Degrees

Ph.D. **Mechanical Engineering, University of Michigan, Ann Arbor, MI, USA, August, 2010.**
Dissertation Title: "*Multi-Input Multi-Output (MIMO) Adaptive Process Control in Stamping Using Punch Force*"
Committee Members: Professor A. Galip Ulsoy (Chair), Professor Jack Hu, Professor Jing Sun, and Dr. Ravi Venugopal

M.S. **Mechanical Engineering, Seoul National University, Seoul, Korea, February, 2001.**
Thesis Title: "*Experiment and Modeling of Auto-ignition of Propane and n-Butane Blends using a Rapid Combustion Machine*", Advisor: Professor KyoungDoug Min

B.S. **Mechanical Engineering, Ajou University, Suwon, Korea, February, 1999.**
Graduation Project (Voluntary): "*Design and Simulation for Engine Cycle Simulation of Diesel and Gasoline Engine*" Graduation with Summa Cum Laude (Ranked 1st out of 120 Undergraduate Class of about 120 students)

■ Position at DGIST

Associate Professor, Department of Robotics Engineering	Mar. 2020 ~ Present
Assistant Professor, College of Transdisciplinary Studies	Aug. 2016 ~ Feb. 2020

■ Work Experiences

Samsung | HanWha Techwin Seongnam, Korea
Principal Research Engineer Aug. 2010-Aug. 2016

• Project: Design and development of high-performance camera and weapon stabilization control algorithm based on dynamic system simulation and analysis for RCRS mounted on unmanned ground vehicle, boat and unmanned aviation vehicles

(funded by Agency for Defense Development). Signal processing of sensors (e.g., gyro, encoder and accelerometer) in development of RCRS (i.e., Kalman filter, recursive least squares and other filters). Co-simulation analysis on combination with multi-body dynamics model simulation (i.e., RecurDyn and ADAMS) and control system model design (i.e., Matlab/Simulink) for improving camera and robotic arm stabilization of RCRS.

- Project: Design and analysis of high performance in camera control system for Pan-Tilt-Zoom camera mechanism by using Hardware In the Loop Simulation (HILS). Simulation and experiments on shock and vibration installation environment for PTZ camera image stabilization performance improvement.

University of Michigan Ann Arbor, MI, USA
Research Assistant Jan 2007-July 2010

- Project: Development of the dynamic system modeling structure of sheet metal forming process and estimated derived model parameters with system identification techniques (funded by Michigan State Labor Department). Design and implementation of the process control algorithms using optimal control, auto-tuning method, adaptive control approaches (i.e., direct model reference adaptive control and indirect self-tuning regulator using the look-up table scheme. Development of experimental system by using the embedded target machine (i.e., Opal-RT Lab) with simulated adaptive control algorithm generated by C-code generation toolbox in Matlab/Simulink.

Hyundai Motor Company Seoul, Korea
Senior Research Engineer Jan 2001-Aug 2006

- Project: Design and development of motor driven power steering (MDPS), electro-hydraulic power steering(EHPS) and other types of active steering systems for improving vehicle stability and fuel economy. Simulation analysis on wheel alignments (e.g., camber, toe-in and caster) behavior in terms of bump and rebound stroke using ADAMS-Car Simulation. Development of experimental system and analysis for combination with electrical stability program (ESP) and active steering system for improving vehicle ride and handling performance.

■ Professional Accomplishments: Teaching

New Courses Introduced at DGIST

- MECH308 – Introduction to Control Engineering (Junior Level): Students will study on characteristics by transfer function between input and output or by state space approaches. Based on the diverse control-mechanism including not only mechanical and electronically control system but also chemical reaction process control and biological response and adjusting system, this contents of lecture include modeling of above diverse control systems and mechanism, analysis on the characteristics and response in closed-loop control system. Lecture and laboratory.
- MECH403 – Mechatronics (Junior/Senior Level): This course is an introduction to designing mechatronics systems, which require integration of the mechanical and electrical engineering disciplines. There are significant laboratory-based design experiences. Topics covered in the course include: Low-level interfacing of software with hardware; use of high-level graphical programming tools to implement real-time computation tasks (e.g., Matlab/Simulink, LabVIEW, C++ and etc); digital logic; analog interfacing and power amplifiers; measurement and sensing; electromagnetic and optical transducers; control of mechatronic systems. Lecture and laboratory.
- MECH306 – Engineering Vibration (Junior/Senior Level): This course is an introduction to engineering vibration of lumped-parameter models of mechanical systems. Topics covered include the response to the harmonic excitation, free and forced vibration of linear multi-degree of freedom models of mechanical systems and matrix eigenvalue problems. It also includes design methods for vibration suppression, vibration testing and experimental modal analysis. Application to the design of mechanical structures such as robotic arms, vehicle suspension and diverse vibrational engineering systems. In particular, this course contains to conduct the team-based project. Each team should select problems from the real world. Based on the theory learned in the class, each team will have an opportunity to solve the real problems – simplify problems, derive equations, obtain solutions and make several presentations. Lecture and laboratory.
- MECH404 – Engineering Design (Senior Level): Through the course of engineering design and production, engineering system that utilizes transdisciplinary knowledge gained through physical, chemical, biological, mathematical and engineering subjects is designed and produced, and creativity and application are cultivated to students. The main objective

of this course is to expand the experience of creating a term project through creative experimentation and to learn the experience of designing and manufacturing a more practical and high-end system. Students will organize a team of 3-4 people to conduct a competition project to apply what they have learned in theory. During the term project, students will experience the problem definition, the modeling through drawing, comparing and evaluating several design alternatives considering the selected design requirement evaluation, design goals and constraints. Not only are they evaluated through technical reports, design proposals, oral presentations, but also reflect the feedback of faculty and other students to improve project completion. Finally, I will discuss the ethical issues, scope of responsibility, and assembly / reliability of design. Lecture and laboratory.

- RT627 Vehicle Dynamics and Control (Graduate Level): Physical understanding of automotive vehicle dynamics including simple lateral, longitudinal and ride quality models. An overview of active safety systems will be introduced by including the basic concepts and terminology, the state-of-the-art development, and basic principles of systems such as ABS, traction control, dynamic stability control, and roll stability control. Passive, semi-active and active suspension systems will be analyzed. Concepts of autonomous vehicle technology including drive-by-wire and steer-by-wire systems, vehicle stability control, adaptive cruise control and lane keeping systems. Moreover, the term-project is included to practice about what students have learned throughout the whole lectures. As for the term-project, after self-based-choosing and reviewing a recent research paper about vehicle dynamics and control methodologies for improving vehicle stability, safety and autonomous maneuver, students will be asked to have presentation with simulation results based on contents from the reviewed paper individually.
- IC601c Introduction to Intelligent Mobility Systems (Graduate Level): The aim of the interdisciplinary course, "Introduction to an Intelligent Mobility Systems", is to enable students to acquire the fundamentals of all types of autonomous mobile things including electric vehicles, autonomous vehicles, self-driving car, mobile robot, flying robots and etc. The course covers the basics of intelligent mobility systems, focusing on technological, systems and institutional aspects; basic knowledge of technological elements such as sensors, actuators, controller, and HMI; infrastructure, information and communication technology, and data processing; safety and security issues; industry trends; and the advanced technological issues. The course combines theoretical and practical learning materials for intelligent mobility systems with a focus on real-world applications. This course seeks above all to be inter- and multi-disciplinary. Students will find the dedicated tools and knowledge necessary for an initial professional experience in the vast field of intelligent mobility, which they can then orientate according to their affinities and choices of major special topics: velocity control system & autonomous vehicle, path planning & tracking control for self-driving and human mobility interaction.

Course Satisfaction Results (Out of 100):

Courses	MECH308	MECH403	MECH306	MECH404	RT627	IC601c
Year 2025						
Year 2024				100.0		
Year 2023					96.0	
Year 2022		99.4		99.0		93.5
Year 2021				91.3	96.2	99.0
Year 2020		91.6		98.1		
Year 2019		92.8	93.1			
Year 2018	90.5	92.3	98.1	93.5		
Year 2017	88.8	94.9		80.4		
Year 2016		83.4				

Ph.D. Thesis Committee Chaired

(5) Jongrak Hwang, (February 2025 ~ Current) "Investigating the Impact of Adverse Weather Conditions on Object Detection Performance and Time to Collision for Self-Driving Cars"
(4) Taesoo Kim, (August 2024 ~ Current) "Investigating the Impact of Adverse Weather Conditions on Object Detection Performance and Time to Collision for Self-Driving Cars"
(3) Jongho Bae, (March 2023 ~ Current) "Intelligent Autonomous Mobile Robot Planning and Tracking Control"
(2) Sungjin Lim, (March 2022 ~ Current) "Autonomous vehicle dynamics system state/parameter estimation and control, Intelligent autonomous vehicle"
(1) Bilal Sadiq, (March 2021 ~ Current) "Model Predictive Control Algorithm for Autonomous Vehicle"

Integrated M.S./Ph.D. Thesis Committee Chaired

(8) Jongyeop, Kim, (August 2025 ~ Current) "AI based Perception Algorithm for self-driving car"
(7) Jaewoo An, (February 2025 ~ Current) "Autonomous driving system and control"
(6 Youngho Cheon, (March 2024 ~ Current) "LiDAR 3D object detection for autonomous vehicle"
(5) Jaewoong Huh, (March 2024 ~ Current) "Autonomous driving system and control"
(4) Junhyung Choi, (September 2023 ~ Current) "Al based Model Predictive Control of Path Tracking Control for Autonomous Vehicle"
(3) Sungjung Park, (March 2022 ~ Current) "Autonomous Vehicle System Path Planning and Control"
(2) Junghyun Seo, (March 2022 ~ Current) "Object detection and tracking by Camera & LiDAR, Autonomous vehicle control and path planning"
(1) Hyeonjae Jeon, (March 2022 ~ Current) "CARLA Simulator-based Evaluation Framework Development of Lane Detection Accuracy Performance under Sensor Blockage caused by Heavy Rain for Autonomous Vehicle"

M.S. Thesis Committee Chaired

(14) Yohan, Kil (August 2025 ~ Current), "Al based Control Algorithm for Autonomous Driving System"
(13) Bookeun Park, (February 2025 ~ Current), "Autonomous Driving System, Sensor-embedded light system"
(12) Hyungseok Kim, (February 2025 ~ Current), "Noise removal based robot vision"
(11) Hyoeun Kwon, (February 2025 ~ Current), "Robotics Engineering and Digital Twin"
(10) Jiho Kim, (August 2024 ~ Current), "Localization for autonomous vehicle"
(9) Ikhyeon Kwon, (March 2024 ~ Current), "Autonomous driving system, Fleet management system"
(8) Youngseo Hwang, (March 2022 ~ Current), "Intelligent Autonomous Vehicle Perception and Control"
(7) Nakheon Ko, (August 2023 ~ August 2025), "FedAPT: Inter-Floor Noise Complaint Prediction in Residential Complexes via Federated Learning" (CEO and co-founder, MOVERS company)
(6) Jeongmin Choi, (March 2023 ~ February 2025), "Incorporating Road Topography and Bank Angle Estimation in MPC for Enhancing Path Tracking Accuracy and Stability of Autonomous Vehicles" (Research Engineer, Korea Automotive Technology Institute, KATECH)
(5) Taesoo Kim, (March 2022 ~ Aug. 2024), "Robust Object Detection in Adverse Weather Conditions: A YOLO-based Approach" (Doctoral Student of Robotics and Mechatronics Engineering Dept., DGIST)
(4) Doyoung Kim, (March 2022 ~ August 2024), "Integration of Physics-Informed Neural Networks in MPC for Optimal Control of Mobile Robot: A Comparative Performance Analysis" (Research Engineer, DGITRACK)
(3) Sungjun Wang, (March 2022 ~ February 2024), "Computer Vision, Object detection and tracking" (Research Engineer, ETRI)
(2) Yaeohn Kim, (March 2021 ~ February 2023), "Collision Avoidance for Autonomous Mobile Robot: Adaptive Prediction Length based Dynamic Window Approach with Deep Reinforcement Learning" (Research Engineer, Hanwha Robotics)
(1) Minyoung Choi, (August 2020 ~ August 2022), "Evaluation Framework Development for Collision Avoidance and Maneuvering Performance of AGV-UAV Cooperative System" (Research Engineer, Bitsensing company)

■ Professional Accomplishments: Research Projects

(R21) AI based Intelligent Autonomous Vehicle: A Novel Path Planning Framework for Cooperative and Selfless of Decision and Driving, 2025.9 – 2027.8, (Sponsor: National Research Foundation of Korea (NRF), Ministry of Science and ICT)
(R20) Research for Cooperative Coexistence of Humans and Robots in the Era of Robot Web, 2025.7 – 2025.12, (Co-PI: Prof. Giseop Kim, Sponsor: Ministry of Science and ICT, Korea)
(R19) Development of a Cooperative Autonomous Driving System for Low-Cost and Highly Safe Last-Mile Unmanned Delivery Mobility, 2025.7 – 2026.12, (Sponsor: Ministry of Science and ICT, Korea)
(R18) Development of AI-based service robot platform technology enabling human-robot interaction in coexisting environments, 2024.7 – 2025.12, (Sponsor: DGIST & Polaris3D inc.)
(R17) Establishment of experimental environment and dataset for driving control of 4-wheel independent steering vehicle, 2024.9 – 2025.4, (Sponsor: Electronics and Telecommunications Research Institute, ETRI, Daegu, Korea)
(R16) Development of integrated drive module and operation technology for Large-Scale Mobile Robot Platforms, 2024.7 – 2027.12, (Sponsor: Ministry of Trade, Industry and Energy, MOTIE)
(R15) Analysis of safety range of autonomous driving system operation according to driving environment, 2024.7 – 2024.10, (Sponsor: Korea Intelligent Automotive Parts Promotion Institute, KIAPI)
(R14) Development of next-generation sensor technology and artificial intelligence-based autonomous vehicle performance improvement technology, 2024.5 – 2024.12, (Sponsor: Future Vehicle Conversion Parts Division, Daegu, Korea)
(R13) Model Predictive Control (MPC) based path tracking methodology investigation and analysis for autonomous vehicle, 2023.9 – 2023.12, (Sponsor: Korea Intelligent Automotive Parts Promotion Institute, KIAPI)
(R12) Development of Lane Perception and Path Tracking Control Algorithm for Self-Driving Car, 2023.5 – 2023.12, (Sponsor: Electronics and Telecommunications Research Institute, ETRI, Daegu, Korea)
(R11) Research on AI-based MPC Vehicle Tracking Control Algorithm for Minimizing Disparity in the Takeover Transition of

Autonomous Driving, 2023.2 – 2023.12, (Sponsor: Hyundai Motor Company, Korea)

(R10) Investigation on Integrated Sensor Degradation-based Autonomous Driving Performance via Vehicle-to-Environment Analysis (V2E), 2021.6 – 2024.12, (Sponsor: Ministry of Land, Infrastructure and Transport, Korea)

(R9) Development of blind spot path planning/tracking algorithm of autonomous mobile robots using multi-sensor integration for efficient manufacturing automation, 2021.7 – 2023.12, (Sponsor: Ministry of Science and ICT, Korea)

(R8) Development of autonomous driving and collision avoidance technology for pre-recognition and protection of traffic objects via infrastructure connection, 2021.6 – 2023.12, (Sponsor: National Research Fund, Korea)

(R7) Study on Securing Innovative Safety for Self-Driving Vehicle based on Collaboration with Autonomous Flight Robotic System Control, 2020.1 – 2022.12, (Sponsor: Ministry of Science and ICT, Korea)

(R6) Development of Autonomous Vehicle-based Intelligent Campus, 2020.1 – 2020.12, Co-PI's: Prof. Kyeungho Choi, (Sponsor: DGIST)

(R5) Development of Multi-Sensors Fusion-based Maneuvering Control Algorithm for Autonomous Agricultural Tractor, 2019.1 – 2019.12, DGIST (Sponsor: Daedong Co.)

(R4) Development of Integrated Driving Control Algorithm for Self-Driving Automobile, 2019.1 – 2019.12, DGIST.

(R3) Development of Control Algorithms for Autonomous Transplanting Machine, 2018.1 – 2018.12, DGIST, Co-PI's: Prof. Kyeungho Choi, (Sponsor: Daedong Co.)

(R2) Development of Sensor Fusion-based Integrated Control Algorithms for Autonomous Vehicle, 2018.1 – 2018.12, DGIST, Co-PI's: Prof. Kyeungho Choi.

(R1) A Study on Sensors and Algorithms for Autonomous Vehicle, 2018.1 – 2018.12, DGIST, Co-PI's: Prof. Kyeungho Choi.

■ Publications: Journal Papers

(J19) Jeongmin Choi, Sungjin Lim, Joonyoung Choi, Kanghyun Nam and Yongseob Lim, "Incorporating Road Topography and Bank Angle Estimation in Model Predictive Control for Autonomous Vehicles", *IEEE Transactions of Control Systems Technology*, 2025. (Under Review).

(J18) Sungjin Lim, Seungki Kim, Bilal Sadiq, Sangho Lee, Kanghyun Nam, and Yongseob Lim, "Improved Safety and Ride Performance Through Nonlinear MPC-Based Optimal Vehicle Motion Control during Takeover Transitions for Autonomous Vehicles", *IEEE Transactions of Control Systems Technology*, 2025. (Under Review).

(J17) Hyeonjae Jeon, Junghyun Seo, Taesoo Kim, Sungho Son, Jungki Lee, Gyeungho Choi, Yongseob Lim, "RainSD: Rain Style Diversification Module for Image Synthesis Enhancement using Feature-Level Style Distribution", *Robotics and Autonomous Systems*, Vol. 186, 2025 (link).

(J16) Bilal Sadiq, Sungjin Lim, Yongseob Lim, "Advanced Path Tracking Using Laguerre Exponentially Weighted MPC with Robust Non-singular Terminal SMC for Improved Direct Yaw Moment for Four-Wheel Independent Driving Vehicle", *IEEE Access*, 2024 (link).

(J15) Junghyun Seo, Sungjun Wang, Hyeonjae Jeon, Yongsik Jin, Soon Kwon, Jeseok Kim, Yongseob Lim, "LuminanceGAN: Controlling the brightness of generated images for data augmentation in various night conditions", *Pattern Recognition Letters*, Vol. 186, 2024 (link).

(J14) Jinu Pahk, Seongjeong Park, Jungseok Shim, Sungho Son, Jungki Lee, Jinung An, **Yongseob Lim**, GyeungHo Choi, "Lane Segmentation Data Augmentation for Heavy Rain Sensor Blockage using Realistically Translated Raindrop Images and CARLA Simulator", *IEEE Robotics and Automation Letters* (*RA-L*), 2024 (link)

(J13) Lennart Lorenz Freimuth Jahn, Seongjeong Park, Jinung An, **Yongseob Lim**, Gyeungho Choi, "Enhancing Lane Detection with a Lightweight Collaborative Late Fusion Model", Robotics and Autonomous Systems, 2024 (link).

(J12) Minhyeok Baek, Jinu Pahk, Jungseok Shim, Seongjeong Park, **Yongseob Lim**, GyeungHo Choi, "Study on Map Building Performance Using OSM in Virtual Environment for Application to Self-Driving Vehicle", *Journal of Auto-Vehicle Safety Association*, Vol. 15, No 2, 2023 (link).

(J11) Sungjun Wang, Junghyun Seo, Hyunjae Jeon, Sanghyun Park, **Yongseob Lim**, "Horizontal Attention Based Generation Module for Unsupervised Domain Adaptive Stereo Matching", *IEEE Robotics and Automation Letters* (*RA-L*), 2023, DOI: 10.1109/LRA.2023.3313009.

(J10) Jinu Park, Jungseok Shim, Minhyeok Baek, **Yongseob Lim**, Gyeungho Choi, "Effects of Sim2Real Image Translation via DCLGAN on Lane Keeping Assist System in CARLA Simulator", *IEEE Access*, 2023, DOI: 10.1109/ACCESS.2023.3262991

(J9) Hyeonjae Jeon, YaeOhn Kim, Minyoung Choi, Donggeon Park, Sungho Son, Jungki Lee, Gyeungho Choi, **Yongseob Lim**, "CARLA Simulator-based Evaluation Framework Development of Lane Detection Accuracy Performance under Sensor Blockage caused by Heavy Rain for Autonomous Vehicle", *IEEE Robotics and Automation Letters* (*RA-L*), DOI: *10.1109/LRA.2022.3192632*, 2022.

(J8) Eunbin Seo, Seunggi Lee, Hoyeong Yeo, Gwanjun Shin, Gyeungho Choi, **Yongseob Lim**, "Development of an Improved Geometric Path Tracking Algorithm with Real Time Image Processing Methods", *Journal of Auto-Vehicle Safety Association*, Vol. 9, DOI: *https://doi.org/10.22680/kasa2021.13.2.035*, 2021.

(J7) Eunbin Seo, Seunggi Lee, Gwanjun Shin, Hoyeong Yeo, **Yongseob Lim**, Gyeungho Choi, "Hybrid Tracker Based Optimal Path Tracking System of Autonomous Driving for Complex Road Environments", *IEEE Access* Vol. 9, DOI: *10.1109/ACCESS.2021.3078849*, 2021.

(J6) Hyunjin Bae, Gu Lee, Jaeseung Yang, Gwanjun Shin, Gyeungho Choi, **Yongseob Lim**, "Estimation of the Closest In-Path Vehicle by Low-Channel LiDAR and Camera Sensor Fusion for Autonomous Vehicles", *Sensors* 21, 3124, *https://doi.org/10.3390/s21093124*. 2021.

(J5) Minho Oh; Bokyung Cha; Inhwan Bae; Gyeungho Choi; **Yongseob Lim**, "An Urban Autodriving Algorithm Based on a Sensor-Weighted Integration Field with Deep Learning", *Electronics*, Vol. 9, Issue 1, 158, *https://doi.org/10.3390/electronics9010158*, 2020.

(J4) Inhwan Bae, Yeounghoo Kim, Taekyung Kim, Minho Oh, Hyunsu Ju, Seulki Kim, Gwanjun Shin, Sunjae Yoon, Chaejin Lee, **Yongseob Lim**, Gyeungho Choi, "Improved Environment Recognition Algorithms for Autonomous Vehicle Control," *Journal of Auto-Vehicle Safety Association*, Vol. 11, pp. 35-43, *https://doi.org/10.22680/kasa2019.11.2.035*, 2019.

(J3) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Auto-tuning and Adaptive Stamping Process Control," *Control Engineering Practice*, Vol. 20, pp. 156-164, *https://doi.org/10.1016/j.conengprac.2011.10.006*, 2012.

(J2) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Multi-Input Multi-Output Modeling and Control for Stamping," *Journal of Dynamic Systems, Measurement, and Control*, Vol. 132, pp. 1-13, *https://doi.org/10.1115/1.4001332*, 2010.

(J1) Hyunguk Kim, **Yongseob Lim**, Kyoungdoug Min, Daeyup Lee, "Investigation of Auto-ignition of Propane and n-Butane Blends Using a Rapid Compression Machine," *KSME International Journal*, Vol. 16, No. 8, pp. 1127~1134.

■ Publications: Conference Proceedings

(C48) Hyoeun Kwon, Suwoong Lee, Wookyong Kwon, Yongsik Jin, **Yongseob Lim**, "Long Short-Term Memory Network-Based H∞ Synchronization Control and Anomaly Detection for Cyber-Physical Systems", IEEE International Conference on Systems, Man, and Cybernetics (SMC), Vienna, Austria, 2025.

(C47) JaeWoong Huh, **Yongseob Lim**, "Real-time Two-Wheeled Mobile Robot Trajectory Tracking with PINN-based Model Predictive Control", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), LBR-Poster, Hangzhou, China, 2025.

(C46) Jiho Kim, Jongrak Hwang, Soon Kwon, Jeseok Kim, **Yongseob Lim**, "HitchNet: Graph Attention and Temporal Convolutional Networks for Hitch Angle Estimation of Autonomous Towing Vehicles", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), LBR-Poster, Hangzhou, China, 2025.

(C45) Joonyoung Choi, Seongjeong Park, Sungjin Lim, Jaewoo An, Jaewoong Huh, **Yongseob Lim**, "Prediction of Motion Sickness in Autonomous Vehicle Passengers Using 6DOF-SVC and AI-based Vehicle-Human Models", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), LBR-Poster, Hangzhou, China, 2025.

(C44) Taesoo Kim, Junghyun Seo, Hyeonjae Jeon, JinUng An, GyeungHo Choi, **Yongseob Lim**, "Lab to Real: CIELAB Loss for Realistic Night to Day Image Translation Model", 19th International Conference on Intelligent Autonomous Systems (IAS-19), Genoa, Italy, 2025.

(C43) JongHo Bae, ChulHee Bae, ManGi Lee, SungHo Jin, GunRae Cho, JinUng An, GyeungHo Choi, **Yongseob Lim**, "Platform development and durability testing of an amphibious reconnaissance robot with screw wheels", 19th International Conference on Intelligent Autonomous Systems (IAS-19), Genoa, Italy, 2025. ***Best Paper Award***

(C42) Sungjin Lim, Illés Vörös, **Yongseob Lim** and Gábor Orosz, "The effects of four-wheel steering on the path-tracking control of automated vehicles", 22nd Asia Pacific Automotive Engineering Conference, Jeju, Korea, 2024. ***Best Dialogue Award.***

(C41) Joonyoung Choi, Sungjin Lim, Jeongmin Choi, Sungjung Park, Taehoon Kim, Jinung An, Gyeungho Choi, and **Yongseob Lim**, "A Novel Prediction of Motion Sickness in Autonomous Vehicle Passengers Using 6DOF-SVC and GRU-based Vehicle-Human Models", *IEEE International Conference on Robotics and Automation* (ICRA), Atlanta, GA, USA, 2025 (Under Review).

(C40) Yongsik Jin, Joonyoung Choi, and **Yongseob Lim**, "GRU-Based Trajectory Tracking Controller Design for Autonomous Vehicles: A Data-Driven Approach to Stability and Performance", *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), LBR-Poster, Abu Dhabi, UAE, 2024.

(C39) Jeongmin Choi, Joonyoung Choi, Sungjin Lim, Sadiq Bilal, and **Yongseob Lim**, "Incorporating Road Topography and

Bank Angle Estimation in Model Predictive Control for Enhancing Path Tracking Accuracy and Stability of Autonomous Vehicles", *IEEE International Conference on Robots and Systems* (IROS), LBR-Poster, Abu Dhabi, UAE, 2024.

(C38) Junghyun Seo, Hyeonjae Jeon, Joonyoung Choi, Kwangho Woo, **Yongseob Lim**, and Yongsik Jin, "BEV Image-based Lane Tracking Control System for Autonomous Lane Repainting Robot", *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), Abu Dhabi, UAE, 2024 (link).

(C37) Yongsik Jin, Junghyun Seo, Hyeonjae Jeon, Jiyong Oh, Dongyeop Kang, Sungjin Lim, **Yongseob Lim** and Wookyong Kwon, "Novel robust H_infinite filter design considering parameter estimation error for lateral dynamics of autonomous driving vehicles", *IEEE Conference on Decision and Control* (CDC), Milan, Italy, 2024.

(C36) Junghyun Seo, Hyeonjae Jeon, Yongsik Jin **Yongseob Lim**, "Evaluation of Forward/Downward View Camera-Based Lane Detection and Integrated Autonomous Driving Control System", Institute of Embedded Engineering of (IEMEK) Conference (Fall), Jeju, Korea, 2023. ***Outstanding Paper Presentation Award***.

(C35) Sungjin Lim and **Yongseob Lim**, "Model Predictive Control for Path Tracking of Four-Wheel Independent Steering Vehicle Using Bayesian Hyperparameter Optimization Based LSTM Tire Force Estimator", *Korea Society Automotive Engineering* (KSAE) Conference (Fall), Ulsan, Korea, 2023.

(C34) Jeongmin Choi, Sungjin Lim, Joonyoung Choi, and **Yongseob Lim**, "Path tracking using Kalman filter-based disturbance observer combined with model predictive control", *Korea Society Automotive Engineering* (KSAE) Conference (Fall), Ulsan, Korea, 2023.

(C33) Taesoo Kim, Hyeonjae Jeon, Junghyun Seo, and **Yongseob Lim**, "Effects of Adverse Weather Conditions on Object Detection and Time-to-Collision Estimation", *Korea Society Automotive Engineering* (KSAE) Conference (Spring), Pyeongchang, Korea, 2023.

(C32) Junghyun Seo, Sungjun Wang, Hyeonjae Jeon, Taesoo Kim, and **Yongseob Lim**, "Adjusting the Brightness of Generated Image for Data Augmentation in Diverse Night Environment", *Korea Society Automotive Engineering* (KSAE) Conference (Spring), Pyeongchang, Korea, 2023.

(C31) Sungjin Lim and **Yongseob Lim**, "MPC Based Four Wheel Independent Steering Vehicle Path Tracking Using LSTM Estimator", *Korea Society Automotive Engineering* (KSAE) Conference (Spring), Pyeongchang, Korea, 2023.

(C30) Sungjin Lim, Bilal Sadiq and **Yongseob Lim**, "Deep Learning Based Path Tracking Using LSTM Estimator Combined with MPC for Autonomous Four-Wheel Independent Steering Vehicle", *IEEE International Conference on Robotics and Automation* (ICRA), LBR-Poster, London, UK, 2023.

(C29) Taesoo Kim, Hyeonjae Jeon and **Yongseob Lim**, Challenges of YOLO-Series for Object Detection in Extremely Heavy Rain: CALRA Simulator-based Synthetic Evaluation Dataset", *IEEE International Conference on Robotics and Automation* (ICRA), LBR-Poster, London, UK, 2023.

(C28) Hyeonjae Jeon, YaeOhn Kim, Taesoo Kim, Jungki Lee, Gyeungho Choi, **Yongseob Lim**, "Challenges of Lane Detection using Deep Neural Network in Extremely Heavy Rain: CARLA Simulator-based Synthetic Evaluation Dataset", *International Autonomous Systems* (IAS), Suwon, Korea, 2023.

(C27) Bilal Sadiq, **Yongseob Lim**, "An Improved Path Tracking Laguerre based Exponential Weight Design for Vehicle Motion Using Adaptive Model Predictive Control", *Automation and Systems* (ICCAS), Busan, Korea, 2022.

(C26) Yaeohn Kim, Sungjun Wang, Hyeonjae Jeon, **Yongseob Lim**, "Deep Reinforcement Learning based Modified Dynamic Window Approach", 22nd *International Conference on Control, Automation and Systems* (ICCAS), Busan, Korea, 2022.

(C25) Junghyun Seo, Geon Park, Giwhan Park, **Yongseob Lim**, "Low-level Hovering system of quad-rotor itself using Reinforcement Learning", 22nd *International Conference on Control, Automation and Systems* (ICCAS), Busan, Korea, 2022.

(C24) Hyeonjae Jeon, YaeOhn Kim, Minyoung Choi, Donggeon Park, Sungho Son, Jungki Lee, Gyeungho Choi, Yongseob Lim, "CARLA Simulator-based Evaluation Framework Development of Lane Detection Accuracy Performance under Sensor Blockage caused by Heavy Rain for Autonomous Vehicle", *IEEE International Conference on Robots and Systems* (IROS), Kyoto, Japan, 2022.

(C23) Yaeohn Kim, Hyeonjae Jeon, Minyoung Choi, Jeonghun Kim, Jeseok Kim, Soon Kwon, Jinung An, Gyeungho Choi, **Yongseob Lim**, "Improved collision avoidance performance by using infra-surveillance sensor detecting objects in blind spots for autonomous mobile robot", *The 36th ICROS Annual Conference*, Geoje, Korea, 2022.

(C22) Minyoung Choi, Yaeohn Kim, Hyeonjae Jeon, Taesoo Kim, Geon Park, Jiye Lee, Seungha Ryoo, Seonmu Oh, Jaemin Yoo, Gyeungho Choi, **Yongseob Lim**, "Evaluation of Improved Maneuvering Performance using AGV-UAV Cooperative System in Virtual Road Scenarios", *The 36th ICROS Annual Conference*, Geoje, Korea, 2022.

(C21) Hyeonjae Jeon, YaeOhn Kim, Minyoung Choi, Donggeon Park, Sungho Son, Jungki Lee, Gyeungho Choi, **Yongseob Lim**,

"Performance Evaluation Method of Lane Detection System under Sensor Blockage caused by Adverse Weather Condition for Autonomous Vehicle", *The Conference of Korea Automotive Safety Association*, *Yangyang*, Korea, 2022.

(C20) Yaeohn Kim, Yaeohn Kim, Hyeonjae Jeon, Minyoung Choi, Sungho Son, Jungki Lee, Jinung An, Gyeungho Choi, Yongseob Lim, "Improved Lane Changing Control System with Varying Look-Ahead Distance in accordance with Longitudinal Vehicle Velocity" *The Conference of Korea Automotive Safety Association*, Yeosu, Korea, Oct. 27-29, 2021.

(C19) Eunbin Seo, Gwanjun Shin, Gu Lee, Gyeungho Choi, Yongseob Lim, "Hybrid Path Tracking Algorithm by Using Real-Time Image Processing" *The 36th ICROS Annual Conference*, Yeosu-Sono Calm, Korea, June 23-25, 2021. ***Outstanding Paper Award***.

(C18) Hyunjin Bae, Gu Lee, Jaeseung Yang, Gwanjun Shin, Gyeungho Choi, Yongseob Lim, "LiDAR and Camera Fusion based Closet In-Path Vehicle (CIPV) Estimation Algorithm for Autonomous Driving" *The Spring Conference of Korea Automotive Safety Association*, Gangneung-si, Korea, April. 29-30, 2021.

(C17) Juho Song, Gwanjun Shin, Geonhee Sim, Gyeungho Choi, Yongseob Lim, Wooyoung Jung, "Implementation of a Robust Integrated Fault-Recovery Algorithm to Improve the Safety of Autonomous Vehicle" *The Conference of Korea Automotive Safety Association*, Jeju, Korea, Nov. 26-28, 2020 (Poster).

(C16) Eunbin Seo, Hoyeong Yeo, Gwanjun Shin, Seunggi Lee, Gyeungho Choi, Yongseob Lim, Wooyoung Jung, "Geometric Path Tracking Algorithm based on Improved Lane Detection through Real Time Post-processing with Estimated Interpolations" *The Conference of Korea Automotive Safety Association*, Jeju, Korea, Nov. 26-28, 2020 (Poster).

(C15) Minho Oh, Bokyung Cha, Inhwan Bae, Hyoseung Choi, Junkyu Cho, Junho Jeong, Kyuyeol Park, Gwanhyeong Koo, Doyeon Choi, Taekyung Kim, Gwanjun Shin, Yeongung Kim, Jungpyeong Hwan, Yeonghoo Kim, Gyeungho Choi, Yongseob Lim "Adaptive Urban Auto-driving Algorithm based on Sensor Weighted Integration Field" *The Fall Conference of Korea Automotive Safety Association (KASA)*, Jeju, Korea, Nov.7-8, 2019.

(C14) Inhwan Bae, Bokyung Cha, Minho Oh, Hyoseung Choi, Junkyu Cho, Junho Jeong, Kyuyeol Park, Gwanhyeong Koo, Doyeon Choi, Taekyung Kim, Gwanjun Shin, Yeongung Kim, Jungpyeong Hwang, Yeonghoo Kim, Gyeungho Choi, Yongseob Lim, "Sparse Spatial CNN for Traffic Lane Recognition on Urban Road Environments" *The Fall Conference of Korea Automotive Safety Association (KASA)*, Jeju, Korea, Nov.7-8, 2019.

(C13) Kyuyeol Park, Gwanhyeong Ko, Yeongung Kim, Yeongho Kim, Taekyung, Kim, Inhwan Bae, Gwanjun Shin, Minho Oh, Junho Jeong, Junkyu Cho, Bokyung Cha, Doyeon Choi, Hyoseung Choi, Jungpyeong Hwang, Gyeungho Choi, Yongseob Lim, "Development of Collision-Free Path Planning Algorithm Considering Moving Path of Dynamic Obstacles in Artificial Potential Field for Autonomous Vehicles" *The Fall Conference of Korea Automotive Safety Association (KASA)*, Jeju, Korea, Nov.7-8, 2019.

(C12) Inwhan Bae, Minho Oh, Bokyung Cha, Yongseob Lim, Gyeungho Choi, "Deep Learning Based Steering Angle Correction System Using Vanishing Point for Autonomous Vehicle" SOItmc-Meijo University, Nagoya, Japan, Jun. 27-July 1, 2019.

(C11) Seonjae Yoon, Chaejin Lee, Youngjun Cho, Yongseob Lim, Gyeungho Choi, "Camera Vision-Based Transplanted Line Detection Algorithm for Intelligent Agricultural Vehicle" *The Spring Conference of Korea Automotive Safety Association (KASA)*, University of Seoul, Korea, May. 2-3, 2019.

(C10) Inwhan Bae, Taekyoung Kim, Minho Oh, Hyeonsoo Ju, Yeonghoo Kim, Yongseob Lim, Gyeungho Choi, "Improved Environment Recognition and Integrated Control Algorithms for Autonomous Vehicle" *The Fall Conference of Korea Automotive Safety Association*, Wonju, Korea, Nov. 8-9, 2018.

(C9) Chaejin Lee, Jinwoo Lee, Jihwan Seo, Kyeongsik Shin, Lim, Yongseob Lim, Gyeungho Choi, "A Study on Sensors and Algorithms for Autonomous Vehicle" *The 3rd International Conference on Engineering Science and Innovative Technology*, Phuket, Thailand, April 19-22, 2018.

(C8) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Reconfigurable Process Control for Stamping" *ASME International Symposium on Flexible Automation* (*ISFA*), Hyogo, Japan, July 14-16, 2014.

(C7) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Improved Part Quality in Stamping via Auto-Tuning and Adaptive Control," *ASME International Symposium on Flexible Automation* (*ISFA*), Tokyo, Japan, July 12-14, 2010.

(C6) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Direct and Indirect Adaptive Process Control of Sheet Metal Forming," *ASME International Symposium on Flexible Automation* (*ISFA*), St. Louis, MO, June 2012.

(C5) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Improved Part Quality in Stamping Using Multi-Input Multi-Output Process Control," *American Control Conference* (*ACC*), Saint Louis, MO, USA, June 10-12, pp. 5570–5575, 2009.

(C4) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "Advances in the Control of Sheet Metal Forming," *International Federation of Automatic Control* (*IFAC*), Seoul, Korea, July 6-11, pp. 1875-1883, 2008.

(C3) **Yongseob Lim**, R. Venugopal, A.G. Ulsoy, "A Multi-Input Multi-Output Model for Stamping Process Control," *ASME*

International Symposium on Flexible Automation (*ISFA*), Atlanta, GA, USA, June 23-26, pp. 1-8, 2008.

(C2) **Yongseob Lim**, H. Sung, S. Park, Unkoo Lee, "Development and Experiment of Variable Rack Stroke System," *SAE World Congress*, 2005-01-1384, 2005.

(C1) **Yongseob Lim,** Hyunguk Kim, Sangsoo Pae, and Kyoungdoug Min, "Experiment and Modeling of Auto-ignition of Propane and n-Butane Blends using a Rapid Compression Machine," *The Third Asia-Pacific Conference on Combustion*, Seoul Korea, pp. 279-287, 2001.

■ Publications: Book

(B1) **Yongseob Lim,** R. Venugopal and A.G. Ulsoy "Process Control for Sheet Metal Stamping," Springer, 2014. (link: https://www.amazon.com/Process-Control-Sheet-Metal-Stamping-Implementation/dp/1447162838)

■ Presentations

(P9) Hyunjin Bae, Gu Lee, Jaeseung Yang, Gwanjun Shin, Gyeungho Choi, Yongseob Lim, "LiDAR and Camera Fusion based Closet In-Path Vehicle (CIPV) Estimation Algorithm for Autonomous Driving" *The Spring Conference of Korea Automotive Safety Association*, Gangneung-si, Korea, April. 29-30, 2021.

(P8) Seonjae Yoon, Chaejin Lee, Youngjun Cho, Yongseob Lim, Gyeungho Choi, "Camera Vision-Based Transplanted Line Detection Algorithm for Intelligent Agricultural Vehicle" *The Spring Conference of Korea Automotive Safety Association*, University of Seoul, Korea, May. 2-3, 2019.

(P7) Yongseob Lim, R. Venugopal, A.G. Ulsoy, "Reconfigurable Process Control for Stamping" *ASME International Symposium on Flexible Automation* (*ISFA*), Hyogo, Japan, July 14-16, 2014.

(P6) Yongseob Lim, R. Venugopal, A.G. Ulsoy, "Improved Part Quality in Stamping via Auto-Tuning and Adaptive Control," *ASME International Symposium on Flexible Automation* (*ISFA*), Tokyo, Japan, July 12-14, 2010.

(P5) Yongseob Lim, R. Venugopal, A.G. Ulsoy, "Improved Part Quality in Stamping Using Multi-Input Multi-Output Process Control," *American Control Conference* (*ACC*), Saint Louis, MO, USA, June 10-12, pp. 5570–5575, 2009.

(P4) Yongseob Lim, R. Venugopal, A.G. Ulsoy, "Advances in the Control of Sheet Metal Forming," *International Federation of Automatic Control* (*IFAC*), Seoul, Korea, July 6-11, pp. 1875-1883, 2008.

(P3) Yongseob Lim, R. Venugopal, A.G. Ulsoy, "A Multi-Input Multi-Output Model for Stamping Process Control," *ASME International Symposium on Flexible Automation* (*ISFA*), Atlanta, GA, USA, June 23-26, pp. 1-8, 2008.

(P2) Yongseob Lim, H. Sung, S. Park, Unkoo Lee, "Development and Experiment of Variable Rack Stroke System," *SAE World Congress*, 2005-01-1384, 2005.

(P1) Yongseob Lim, Hyunguk Kim, Sangsoo Pae, and Kyoungdoug Min, "Experiment and Modeling of Auto-ignition of Propane and n-Butane Blends using a Rapid Compression Machine," *The Third Asia-Pacific Conference on Combustion*, Seoul Korea, pp. 279-287, 2001.

■ Invited Talks

(T13) Yongseob Lim, "Audacious Trials toward Challenges of Adverse Weather Conditions for Autonomous Driving: Deep Learning-based Perception and Control", Purdue University, August, 2024.

(T12) Yongseob Lim, "Challenges of Abnormal Conditions for Autonomous Driving: Deep Learning-based Perception and Control", 3rd Edition of Robotics and Artificial Intelligence, March, 2024.

(T11) Yongseob Lim, "Challenges of Abnormal Conditions for Autonomous Driving: Deep Learning-based Perception and Control", ETRI, August, 2023.

(T10) Yongseob Lim, "Challenges of Adverse Weather Conditions for Autonomous Driving: Deep Learning-based Perception and Control", Agency for Defense Development (ADD), June, 2023.

(T9) Yongseob Lim, "Recent Trends in Autonomous Driving Technology – Audacious Trials Toward Weather Challenges", Gacheon University, December, 2022.

(T8) Yongseob Lim, "Recent Trends in Autonomous Driving Technology – Perception, Decision and Control", Yeungnam University, May, 2022.

(T7) Yongseob Lim, "Special Talk: The World Living with Robots," Busan Institute for Gifted Education & Promotion, Busan, Korea, January, 2022.

(T6) Yongseob Lim, "Who Is the Greatest Researcher," Kyeonggi Science High School, Suwon, Korea, July, 2021.

(T5) Yongseob Lim, "Stabilization Control Algorithms for Remotely Controlled Robotic Arms," Doosan Machine Tool, Korea, 2020.
(T4) Yongseob Lim, "Thoughts on Engineering Career: What is the most important aspect on Engineering," Changwon Science High School, Changwon, Korea, 2019.
(T3) Yongseob Lim, "Thoughts on the Career Development and Design for Senior Students of the Business Administration Department," Ajou University, Business Administration Department, Suwon, Korea, 2014.
(T2) Yongseob Lim, "Mechanical Solution for Reducing Shock Vibration on High-Performance Camera," POSTECH, Mechanical Engineering Department, Pohang, Korea, 2012.
(T1) Yongseob Lim, "Multi-Input Multi-Output (MIMO) Adaptive Process Control in Stamping Using Punch Force", Ajou University, Mechanical Engineering Department, Suwon, Korea, 2010.

■ Technology Transfers

Patents - International

(P8) Yongseob Lim, et al., *DEEP LEARNING-BASED LOW-LIGHT IMAGE DATA AUGMENTATION SYSTEM FOR WITH SPECIFIC BRIGHTNESS*, PCT/KR2024/006075 (2024.5.7)
(P7) Yongseob Lim, et al., *Avoidance routing method based on multi-sensor fusion using control infrastructure and control apparatus*, PCT/KR2022/008858 (2022.6.22)
(P6) Sungpil Chun, Yongseob Lim, *Apparatus and Method for Processing Data Between Neighbors to Prevent Dispute Over Noise Traveling Between Neighbors*, US 10/297,118 (2019.5.21)
(P5) Yongseob Lim, Seungjin Choi, *Control System for rotating shaft*, US 13/604,167(2015.12.15)
(P4) Yongseob Lim, Youngku Kang, Seongjun Cheon, *Apparatus for supporting firearm, firearm assembly, and method of reducing shock of firing*, US 14/097,304(2015.9.15)
(P3) Yongseob Lim, Seungjin Choi, Minsig Kang, *Control system for rotating shaft*, US 13/608,423 (2014.12.9)
(P2) Yongseob Lim, Sangsik Lee, Armament *system interworking with image device and method for operating the same*, WO2013039312 A1, (2013.3.21)
(P1) Yongseob Lim, *Automotive steering rack stroke adjusting device*, US20060169527A1

Patents – Domestic

(P24) Yongseob Lim, Jeongmin Choi, et al., *PATH TRACKING CONTROL SYSTEM AND METHOD FOR A VEHICLE CONSIDERING ROAD SLOPE ANGLE ESTIMATION AND ROAD TERRAIN*, 10-2025-0007044 (2025.1.17)
(P23) Yongseob Lim, Junhyung Choi, et al., *APPARATUS AND METHOD OF PREDICTING MOTION SICKNESS BY PREDICTING HEAD MOTION DATA*, 10-2024-0201951 (2024.12.31)
(P22) Yongseob Lim and Junghyun Seo, *DEEP LEARNING-BASED LOW-LIGHT IMAGE DATA AUGMENTATION SYSTEM FOR WITH SPECIFIC BRIGHTNESS*, 10-2023-0071549 (2023.6.2)
(P21) Yongseob Lim, Sungjin Lim, *PATH FOLLOWING SYSTEM FOR VEHICLE*, 10-2023-0065572 (2023.5.22)
(P20) Yongseob Lim, et al., *AGV-UAV Cooperative Control System*, 10-2022-0000531 (2022.1.3)
(P19) Yongseob Lim, et al., *AVOIDANCE ROUTING METHOD BASED ON MULTI-SENSOR FUSION USING CONTROL INFRASTRUCTURE AND CONTROL APPARATUS*, 10-2021-0122187 (2021.9.14)
(P18) Yongseob Lim, et al., *Foldable Delivery Box for Drone*, 10-2021-0089356 (2021.7.7)
(P17) Yongseob Lim, Sungpil Chun, *Information Communication Technology Device for Consideration Between Neighbors Over Noise*, 1020160114697 (2016.09.06)
(P16) Yongseob Lim, Changhyun Kim, *PTZ Camera for Anti-Step Out Of Motor*, 1020160021565 (2016.02.26)
(P15) Yongseob Lim, *Security Camera System*, 1020150141778 (2015.12.21)
(P14) Yongseob Lim, Seungjin Choi, *Firing apparatus and method for compensating an aiming angle thereof*, 1015780280000 (2015.12.10)
(P13) Yongseob Lim, *Apparatus for Transmitting Rotational Force in Surveillance Camera*, 1020150135934 (2015.12.04)
(P12) Yongseob Lim, *Security Camera System*, 1020150110145 (2015.10.02)
(P11) Yongseob Lim, Youngku Kang, Seongjun Cheon, *Apparatus for supporting firearm, firearm assembly and method for reducing shock by gunshot*, 1020140131778 (2014.11.14)
(P10) Yongseob Lim, *Method for regulating horizontal aim angle of directional object*, 1020140116745 (2014.10.06)
(P9) Yongseob Lim, Youngku Kang, Yongbo Kim, *apparatus for supporting a firearm*, 1020140097930 (2014.08.07)

(P8) Yongseob Lim, ByoungHee Kim, *Turning control method, turning control system and remote-control weapon station*, 1020130091539 (2013.08.19)
(P7) Yongseob Lim, Seungjin Choi, *Control system for rotating shaft*, 1020130030661 (2013.03.27)
(P6) Yongseob Lim, Seungjin Choi, Minsig Kang, *Control system for rotating shaft*, 1020130030662 (2013.03.27)
(P5) Yongseob Lim, Sangsik, Lee, *Armament system interworking with image device and method for operating the same*, 1020130029255 (2013.03.22)
(P4) Yongseob Lim, Kisung Park, *Strong property control device*, 1008360410000 (2008.06.02)
(P3) Yongseob Lim, Minchul Shin, *Variable Steering Rack System*, 1007374660000 (2007.07.03)
(P2) **Yongseob Lim**, *variable rack-stroke apparatus for automobile steering*, 1006225010000 (2006.09.04)
(P1) **Yongseob Lim**, *Mounting Bracket of Steering Gear-box*, 1005891750000 (2006.06.05)

■ Awards & Honors

(H15) Best Paper Award, Paper Title: Platform development and durability testing of an amphibious reconnaissance robot with screw wheels", *19th International Conference on Intelligent Autonomous Systems* (IAS-19), Genoa, Italy, July, 2025.
(H14) Outstanding Paper Presentation Award, Paper Title: Evaluation of Forward/Downward View Camera-Based Lane Detection and Integrated Autonomous Driving Control System, Fall Conference in Institute of Embedded Engineering of Korea (IEMEK), November 2023,
(H13) Outstanding Teaching Award, September 2021, DGIST
(H12) Outstanding Research Paper Award, Tittle: Fast lane Detection Algorithm by Using Real-Time Image Processing", The *36th ICROS Annual Conference*, June 2021.
(H11) 2020 UGRP Best Collaboration Research Project Award, DGIST, January, 2021 (co-advisor: Prof. Gyeungho Choi, Prof. Wooyeung Jung).
(H10) 2019 UGRP Best Collaboration Research Project Award, (Students: Kyuyeol Park, Gwanhyeong Koo, Junho Jeong, Junkyu Cho, Doyeon Choi, Hyoseung Choi), DGIST, January, 2020 (co-advisor: Prof. Gyeungho Choi).
(H9) 2018 UGRP Best Research Project Award, (Students: Inwhan Bae, Taekyoung Kim, Minho Oh, Hyeonsoo Ju, Yeonghoo Kim), DGIST, January 2019 (co-advisor: Prof. Gyeungho Choi).
(H8) 2017 UGRP Best Collaboration Research Project Award, (Students: Jiwhan Seo, Chaejin Lee, Kyoungsik Shin, Jinwoo Lee), DGIST, January 2019 (co-advisor: Prof. Gyeungho Choi).
(H7) Winner of Samsung Patent Competition, Samsung Techwin, May 2012.
(H6) Samsung Global Leaders Program (SLP) Participant - leadership, strategy, marketing and innovation, 2012.
(H5) Robert M. Caddell Memorial Award for Research, Mechanical Engineering, University of Michigan, 2008.
(H4) BrainKorea 21 Project Scholarship from Ministry of Education, Seoul National University, Spring 1999 – Winter 2000.
(H3) Entitled to the Honors List, Ajou University, Feb 1999
(H2) Grant-In-Aid Fellowship (i.e., Daewoo Scholarship) for All A^+ within 16 credits, Ajou University, Spring 1998.
(H1) Scholarship for Outstanding Undergraduate Student, Ajou University, Spring 1992 – Winter 1998.

■ Academic Services

Academic Activities

Advisory Committee Member, Busan Institute for Gifted Education & Promotion, 2020. 01 ~ Current
Deputy Chair, Department of Robotics and Mechatronics Engineering, DGIST, 2023. 04 ~ 2023. 08
Committee Chair, Undergraduate Group Research Program (UGRP) at DGIST, 2020 ~ 2023
Committee Chair/Member, Freshmen Global Leadership Program (FGLP) at DGIST, 2018 ~ 2019

Editorial Activities

Member, Korean Automobile Safety Association (KASA), 2016 ~ Current
Member, Editorial Board, Samsung Human Paper Award, 2020 ~ Current

Industrial Needs Transfers

Member, Evaluation of "Engineering Certificate Program" Keunkuk University, 2014
Member, Evaluation of "Engineering Certificate Program" Hongik University, 2014

Reviewer

Journal: IEEE Trans. On Control System Technology, Journal of Dynamic System, Measurement and Control,

International Journal of Vehicle Modeling and Testing. Journal of Auto-Vehicle Safety Association
Conferences: ASME Dynamic Systems and Control Conference, IEEE America Control Conference
Organizing Committee: HVAC Session co-chair at American Control Conference, St. Louis, MO USA, 2009
Organizing Committee: International University Student Automotive Production Contest, Korean Automotive Transportation Research Institute (KATRI), 2017 ~ Current