

Kihan Kwon

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Seoul, 14717, Korea

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EDUCATION

Ph.D. Candidate, Automotive Engineering Expected 2019

College of Engineering, Hanyang University

Bachelor of Mechanical Engineering Feb.2009

College of Engineering, Hanyang University

INDUSTRY EXPERIENCE

Researcher Feb. 2009 – Feb. 2015

Hyundai Motors Company Hwasung, Korea

- Improved a design of manual transmission for the durability of components including gear, shaft, bearing, case, parking sprag, detent spring, etc.
- Implemented analysis of the performance for the parking system in dual clutch transmission.
- Analyzed the fuel efficiency of the vehicle with automated manual transmission.
- Developed a manual transmission simulator for the analysis of shift feeling.
- Evaluated the performance of hybrid control unit in eco-vehicle by using a vehicle simulation.
- Managed a specification of hybrid CAN in Hyundai Motors Company

SKILLS

CAE: AMESim, Simulink, Adams, MapleSim, Hyperworks, Abaqus, COMSOL, FEMFAT, LabVIEW

CAD: CATIA, Pro/ENGINEER

Language: MATLAB, C++

PROJECT EXPERIENCE

Modeling and Analysis of Powertrain System for Military Vehicle, Hanhwa Land System (HLS) Nov. 2017 – present

- Implemented a modeling and simulation of powertrain system for wheeled and tracked military vehicles and the analysis of performances.

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Modeling of Wheeled Military Vehicle System and Research of Integrated Interface, Hanhwa Land System (HLS)

Jan. 2016 – Dec. 2017

- Implemented a modeling and simulation of wheeled military vehicle and developed an interface environment for the analysis of performances.

Research of Virtual Design for Military Vehicle and Developing Integrated Framework, Agency for Defense Development (ADD)

Jan. 2014 – Dec. 2015

- Developed a simulation model of military vehicle and the optimization of design parameters for mobility and firing performances

RESEARCH EXPERIENCE

Graduate Research Assistant, Computational Design Lab

May 2015 – present

Hanyang University

Seoul, Korea

- Develop the powertrain model of eco-vehicles by using model based design methodology.
- Perform an optimization of gear ratio in powertrain for the energy economy of eco-vehicles.
- Design the gear shifting schedule for the energy economy of 2-speed electric vehicle.
- Implement an optimization of gear shift control for improving drivability of the vehicle with automatic transmission.
- Conduct a study on probabilistic approach for the reliability of vehicle performances.
- Develop the hydro-pneumatic suspension model and the optimization of design parameters for the drivability of military vehicle.

SCHOLARSHIP

Journal

- K. Kwon, M. Seo, S., S. Min (2017). Optimization of Gear Ratio of In-wheel Motor Vehicle Considering Probabilistic Driver Model. *Int. J. Automotive Technology*; Under review.

Presentations

- Design Optimization of Hydro-Pneumatic Suspension for Improving Mobility of Wheeled Military Vehicle. *CDE Annual Conference*, 2018
- Optimization of Reduction Gear Ratio in Series Hybrid Electric Vehicle for Compact Design of Traction Motor. *KSME Annual Conference*, 2017

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- Reliability Analysis for Integrated Performance of Combat Vehicle using Kriging Surrogate Model. *KIMST Annual Conference, 2017*
- Analysis of Reliability Considering Uncertainty of Design Variables for Integrated Performance of Combat Vehicle. *CDE Annual Conference, 2017*
- Optimization of Shift Pattern in 2-speed Transmission for Electric Vehicle to Improve Driving Efficiency. *KSAE Annual Conference, 2016*
- Optimization of Reduction Gear Ratio in Electric Vehicle to Improve Driving Efficiency. *KSAE Annual Conference, 2016*
- Optimization of Pressure Profile in Automatic Transmission for Drivability. *KSAE Annual Conference, 2015*
- Optimization of Reduction Gear Ratio in Vehicle by In-wheel Motor System for Driving Performance and Efficiency. *KSME Annual Conference, 2015*

Posters

- Optimization of Wheeled Combat Vehicle to Minimize Dynamic Error Related to Hit Probability. *KIMST Annual Conference, 2017*
- Optimization of Gear Ratio in In-Wheel Motor Vehicle Considering Driving Styles. *KSAE Annual Conference, 2017*