

MYEONGKYU LEE

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EDUCATION

Kookmin University

2021 - Present

- Master Candidate of Automotive and IT convergence
- Advisor: Ji Hyun Yang

GPA: 4.00/4.00

Kookmin University

2015 - 2021

- Bachelor of Automotive Engineering
- Cumulative rank: **1st** out of 166

GPA: 3.98/4.00

RESEARCH INTEREST

- Human-Vehicle Interaction
- Driver Emotion
- Vehicle/Driver Safety

RESEARCH EXPERIENCE (SELECTED)

Artificial Intelligence Adaptation on the Steering System

Sep. 2021 - Aug. 2022

- Sponsored by Hyundai Mobis, S. Korea
- Detection of hands on/off using Artificial Intelligence
- Built environment for acquiring vehicle data according to hands on/off
- Predicted hands on/off according to vehicle data

Study on the Driver's Mental Model in Take-Over Situation

May 2021 - May 2022

- Sponsored by Hyundai Motors Group, S. Korea
- Analysis of Driver's behavior/mental model at Take-over situation
- Implemented dangerous take-over situation, acquired driver's driving data and survey data
- Analyzed data - why, what makes people lead to accident from their mental model

Study on the Physiological/Vehicle Data according to Emotions

Mar. 2020 - Nov. 2021

- Sponsored by Hyundai Motors Group, S. Korea
- Selected 8 emotions, Induced to Drivers, and Acquired data while driving
- Analyzed data according to emotions (1 publication)

Study on the Driver Behavior in Danger Situations

Mar. 2020 - Dec. 2020

- Sponsored by National Forensic Service, S. Korea
- Implemented four dangerous scenarios, Recruited 186 participants
- Acquired perception, time, reaction time, and diverse data
- Analyzed data using descriptive, inferential statistics, and Machine Learning (3 publications)

Undetectable Communications for Drone Applications

Dec. 2019 - Feb. 2020

- Participated in research at UC Irvine, CA, USA
- Made cryptic code for interaction between drone and controller
- Research Assistance (led by Prof. Marco Leverato and Anas Alsoliman (Ph.D Candidate))

PUBLICATION AND PRESENTATION

1. Journal

- **M. Lee**, J. Choi, S. Kim, and J. Yang*, “Analysis of drivers’ reactions to simulated jaywalking and application of AI classifiers to predict accidents”, in preparation, Accident Analysis And Prevention. SSCI.
- **M. Lee**, S. Lee, S. Hwang, S. Lim and J. Yang*, “Effect of emotion on galvanic skin response and vehicle control data during simulated driving”, under review, Transportation Research Part F: Traffic Psychology and Behaviour. SSCI.
- **M. Lee**, S. Kim, J. Kim and J. Yang*, “Simulator Study on the Response Time and Defensive Behavior of Drivers in a Cut-in Situation”, accepted, International Journal of Automotive Technology. SCIE.

2. Proceedings

- **M. Lee**, S. Kim, D. Jeong, H. Lee, H. Park, H. Han and J. Yang*, “Simulator-based Study of the Response Time and Defensive Behavior of Drivers in Unexpected Dangers at an Intersection”, submitted, Automotive UI’22, Seoul, Korea, September 17-20, 2022.
- H. Pyeon, H. Kim, Y. Bae, **M. Lee**, H. Zhu, J. Yang, and S. Lim*, “Development of method to acquire Hands on/off answer value”, Proceedings of 2022 Spring Conference of KSAE, Seoul, 2-3, June, 2022.
- **M. Lee**, H. Shim, S. Kim, J. Choi, and J. Yang*, “Study of driver’s response time in cut-in situation with driving simulator”, Proceedings of 2021 Spring Conference of ESK, Seoul, 17-18, June, 2021.

3. Patent

- J. Yang, S. Lim, **M. Lee**, H. Zuo, H. Pyeon, and Y. Bae, “Data collection environment for determining whether a driver grips steering wheel or not”, in progress, share ratio: 40%, Korea Patent, 2022.

SKILLS

Programming skills:

- MATLAB/SIMULINK, Python, SPSS, R, HTML, CSS, Javascript, C, C++, LaTeX, SCANer Studio Carmaker, Prescan

Languages:

- Korean(native), English(fluent)

ACADEMIC ACHIEVEMENTS

- **Golden Award** - 2021 BK 21 program poster competition, 2022.
- Graduated **1st** in Automotive Convergence college of Kookmin University, 2021.
- Grade Scholarship: for **all four years**

MISCELLANEOUS

- 2022 AUTO UI Committee member (local chair)
- Military Service (Sergeant) (2016-2017)