Joonbum Lee

Curriculum Vitae

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RESEARCH INTERESTS

Topic — Human-automation teaming, Driving safety, Automated vehicles, Attention management, Driver engagement/disengagement

Methodology — Predictive modeling, Naturalistic data collection and analysis, Data visualization, Literature review

EDUCATION

2014 **Ph.D.**, *University of Wisconsin-Madison*, Madison, *WI.*
Major: Industrial and Systems Engineering (Human Factors)
Dissertation: Integrating the Saliency Map with Distract-R to Predict and Evaluate Distraction Potential
Supervisor: John D. Lee

2011 **M.S.**, *University of Wisconsin-Madison*, Madison, *WI.*
Major: Industrial and Systems Engineering (Human Factors)

2007 **M.A.**, *Pusan National University*, Busan, *South Korea.*
Major: Psychology (Engineering Psychology)
Thesis: Road-crossing and Driving Behavior in the Elderly
Supervisor: Jaesik Lee

2005 **B.A.**, *Pusan National University*, Busan, *South Korea.*
Major: Psychology

AWARDS AND HONORS

2018 Battelle Outstanding Performance Award

2017 Battelle Outstanding Performance Award

2017 CHI Best Paper Award [C.17] (co-authored)

2015 1st Place for Honda Outstanding Student Paper Award [C.6] (supervised)

2015 2nd Place for Honda Outstanding Student Paper Award [C.5] (supervised)

2012 1st Place for the Intel Outstanding Student Paper Award at 4th International Conference on Automotive User Interface and Interactive Vehicular Applications [C.2]

2007 Best Research Achievement Award from Department of Psychology, Pusan National University

2007 *Summa cum laude* (GPA: 4.31/4.5, Rank: 1/12), Pusan National University

RESEARCH EXPERIENCE

2020-Present **Associate Scientist**, University of Wisconsin-Madison, Madison.

- P.21: Understanding override in vehicle automation (Sponsored by Toyota CSRC)
  - Roles: Principal Investigator
- P.20: From operator to collaborator: Human factors issues with semi-automated vehicles in complex driving environments (Sponsored by General Motors)
  - Roles: Principal Investigator
- P.19: Methods to transfer system knowledge to driver/operators to enhance and/or accelerate situational awareness during handoff (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Principal Investigator
- P.18: SHRP2 speeding data: Additional analyses and speeding database development (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Consultant

2019-2020 **Principal Research Scientist-Data Science**, Battelle Memorial Institute, Seattle.

- P.17: Driver Engagement in L3 and L4 ADS: Driver Engagement Strategies and the Impact of Different Types of Disengagement (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Principal Investigator
- P.16: Effects of Education on Speeding Behavior (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Principal Investigator
- P.15: SHRP2 Implementation Assistance Program (IAP) Phase 3 (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Technical lead

2016–2019 **Research Scientist-Data Science**, Battelle Memorial Institute, Seattle.

- P.14: Principles and Guidance for Presenting Drivers with Dynamic Information on Active Traffic Management (Sponsored by National Cooperative Highway Research Program)
  - Roles: Project Manager
- P.13: SHRP2 Implementation Assistance Program (IAP) Phase 2/Phase 3 (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Technical lead
- P.12: Analysis of SHRP2 Speeding Data (Sponsored by National Highway Traffic Safety Administration)
  - Roles: Statistician

2014–2016 **Postdoctoral Associate**, AgeLab, MIT, Cambridge (Supervisor: Bryan Reimer).

- P.11: Advanced Human Factors Evaluator for Automotive Distraction (Sponsored by AHEAD Consortium)
  - Roles: Technical team member
- P.10: Utilizing Head-pose Data to Surrogate Eye-tracking Data for Driver Distraction Research (Sponsored by Santos Family foundation)
  - Roles: Co-PI, Technical lead
- P.9: Assessing Road Type and Traffic Volume Using Drivers' Glance Data (Sponsored by Jaguar Land Rover)
  - Roles: Co-PI, Technical lead

2009–2014 **Graduate Research Assistant**, Cognitive Systems Lab, University of Wisconsin-Madison, Madison.

- P.8: In-Vehicle Voice Control System (Sponsored by National Highway Traffic Safety Administration)
- P.7: Connected Vehicle Design Research and Distraction Assessment (Sponsored by National Highway Traffic Safety Administration)
- P.6: Making Driving Simulator More Useful for Behavioral Research (Sponsored by Federal Highway Administration)
- P.5: Motivation for Speeding (Sponsored by National Highway Traffic Safety Administration)

2004–2007 **Graduate Research Assistant**, Engineering Psychology Lab, Pusan National University, South Korea.

- P.4: Individual Differences in Information Processing
- P.3: A Study on the Ship Collision Avoidance Behavior Using the Full Mission Ship Handling Simulator: Focused on Mariner's Situation Awareness
- P.2: A Study on Specifying Critical Human Factors in Driving Skill Focusing on Drivers' Situation Awareness
- P.1: A Study on Analysis and Enhancement of Mariners' Situation Awareness Based on Integrated Approaches of Psychological Experiments, Ship-Handling Simulation and Real Navigation

GRANT PROPOSALS

G.14 **Understanding Override in Vehicle Automation, 2021**, (Awarded by Toyota CSRC).
- Led proposals
- Role: PI
- Amount: 160,000 USD

G.13 **From Operator to Collaborator: Human Factors Issues with Semi-Automated Vehicles in Complex Driving Environments, 2021**, (Awarded by General Motors).
- Led proposals
- Role: PI
- Amount: 210,000 USD

G.12 **Methods to Transfer System Knowledge to Driver/Operators to Enhance and/or Accelerate Situational Awareness During Handoff, 2020**, (Awarded by NHTSA).
- Wrote technical sections as a subcontractor
- Role: PI of UW-Madison
- Subcontract Amount: 160,000 USD

G.11 **SHRP2 Speeding Data: Additional Analyses and Speeding Database Development, 2020**, (Awarded by NHTSA).
- Wrote technical sections as a subcontractor
- Role: PI of UW-Madison
- Subcontract Amount: 10,000 USD

G.10 **Designing for Target Speed, 2019**, (Submitted to NCHRP).
- Led proposals
- Role: Project Manager/PI
- Amount: 740,000 USD

G.9 **State of Knowledge on Drowsy Driving, 2019**, (Submitted to NHTSA).
- Led proposals
- Role: PI
- Amount: 450,000 USD

G.8 **Driver Engagement in L3 and L4 ADS: Driver Engagement Strategies and the Impact of Different Types of Disengagement, 2019**, (Awarded by NHTSA).
- Contributed technical proposal writing
- Role: PI
- Amount: 1,000,000 USD

G.7 **Using the SHRP2 Naturalistic Driving Study Database to Improve Teen Driving: Development of a Research Agenda, 2019**, (Submitted to TRB).
- Led technical proposal writing
- Role: PI
- Amount: 75,000 USD

G.6 **SHRP2 Naturalistic Driving Study Pooled Fund: Advancing Implementable Solutions, 2019**, (Awarded by FHWA).
- Led technical proposal writing
- Role: Co-PI
- Amount: 25,000 USD

G.5 **NHTSA Behavioral Safety Research for Traffic Safety IDIQ, 2016**, (Submitted to NHTSA).
- Wrote a hypothetical task section of this proposal (Title: Determine the Prevalence and Impact of Legal Marijuana Use on Motorcycle Riders)
- IDIQ contract

G.4 **NHTSA Human Factors and Driver Performance IDIQ, 2016**, (Submitted to NHTSA).
- Wrote a hypothetical task section of the proposal (Title: Interface Metrics for Advanced Technologies)
- IDIQ contract

G.3 **Assessing Road Type and Traffic Volume Using Drivers' Glance Data: A Feasibility Assessment, 2016**, (Awarded by Jaguar Land Rover).
- Led technical proposal writing
- Role: Co-PI
- Amount: 114,000 USD

G.2 **Investigating the Relationship of Driver Head-eye Correspondence (Phase II Grant), 2015**, (Awarded by Santos Family Foundation).
- Led technical proposal writing
- Role: Co-PI
- Amount: 65,000 USD

G.1 **Investigating the Relationship of Driver Head-eye Correspondence (Phase I Grant), 2014**, (Awarded by Santos Family Foundation).
- Led technical proposal writing
- Role: Co-PI
- Amount: 100,000 USD

TEACHING

2020 (Spring) **Instructor**, Arizona State University, Online.
- HSE 531 Data Analytics: Modeling Human-Subjects Data

2019-2020 **Instructor**, Center for Human Performance and Safety, Battelle, Seattle.
- Mini-course: R for Data Science

2014 **Teaching Certificate Program**, MIT, Cambridge.
- Completed the Kaufman Teaching Certificate Program (KTCP) at MIT

2011 **Teaching Assistant**, University of Wisconsin-Madison, Madison.
- Course: Introduction to Human Factors

2004-2006 **Teaching Assistant**, Pusan National University, South Korea.
- Course: Human and Mechanical, Human Factors, Industrial and Organization Psychology

INVITED PRESENTATIONS

IP.18 Guest Lecture for ISyE 349-Introduction to Human Factors at University of Wisconsin-Madison, Madison, Wisconsin
"Human Factors Research in Driving Safety", 2021

IP.17 Enterprise Applications of the R Language Conference (EARL), Seattle, Washington
"R Use Cases: Examining Influence of Roadway Design Features on Drivers' Speed Choice in Washington", 2018

IP.16 Puget Sounds Human Factors and Ergonomics Society, Seattle, Washington
(Webinar) "Driver Distraction: A Human Factors Problem at the Intersection of Transportation and Healthcare", 2018

IP.15 Transportation Research Board 97th Annual Meeting, Washington D.C.
"(Presentation and panel discussion) Data Processing and Statistical Considerations in the Analysis of Site-based Time-series Data from the SHRP2", 2018

IP.14 60th International Annual Meeting of Human Factors and Ergonomics Society, Washington D.C.
"Sensation Seeking and Drivers' Glance Behavior While Engaging in a Secondary Task", 2016

IP.13 Liberty Mutual Research Institute for Safety, Hopkinton, MA.
"Multiple Approaches for a Deeper Understanding of Driver Distraction", 2016

IP.12 Harvard Schepens Eye Research Institute, Boston, MA.
"Investigating Drivers' Head and Glance Correspondence", 2015

IP.11 8th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design, Snowbird, UT.
"Predicting Secondary Task Involvement and Differences in Task Modality Using Field Highway Driving Data", 2015

IP.10 Transportation Research Board 94th Annual Meeting, Washington D.C.
"Analyses of Glance Patterns of Older and Younger Drivers During a Visual-Manual HMI Interaction", 2015

IP.9 AHEAD Consortium, MI
"Glance Pattern Analysis", 2014

IP.8 AHEAD Consortium, MA
"Integrating the Saliency Map with Distract-R to Assess Driver Distraction of Vehicle Displays", 2014

IP.7 Human Factors and Ergonomics Society New England Chapter, MA
"Integrating the Saliency Map with Distract-R to Assess Driver Distraction", 2014

IP.6 57th International Annual Meeting of Human Factors and Ergonomics Society, CA
"A Saliency-based Search Model: Application of the Saliency Map for Driver-vehicle Interfaces", 2013

IP.5 Transportation Research Board 90th Annual Meeting, Washington D.C.
"Matching Simulator Characteristics to Highway Design Problems", 2011

IP.4 Transportation Research Board 90th Annual Meeting, Washington D.C.
"Computational Model of Drivers' Visual Attention for Assessing Simulator Fidelity", 2011

IP.3 Annual Symposium of Korean Psychological Association, South Korea
"Analysis of Age Difference in Road Crossing Behavior Using Signal Detection Theory", 2007

IP.2 Annual Symposium of the Korean Data Analysis Society, South Korea
"The Effects of Stimuli Types and Task Difficulty on Driver?s Memory Search in Dynamic Driving Situation", 2006

IP.1 Conferences of Korean Psychological and Social Issues, South Korea
"Effect of Item Size In-Vehicle Navigation System on Driver's Visual Search and Driving Performances", 2006

PEER REVIEWED JOURNAL ARTICLES

J.20 Kamaraj, A. V., **Lee, J.**, Domeyer, J. E., Liu, S.-Y., and Lee, J. D. (Submitted). Comparing subjective similarity of automated driving style to objective distance-based similarity, *Human Factors: The Journal of Human Factors and Ergonomics Society.*

J.19 **Lee, J.**, Rheem, H., Lee, J. D., Szczerba, J. F., and Tsimhoni, O. (Submitted). Reframing automation interaction: Human-AI teaming in highly automated vehicles, *Journal of Cognitive Engineering and Decision Making.*

J.18 Richard, C. M., **Lee, J.**, Atkins, R., and Brown, J. (2020). Using SHRP2 naturalistic driving data to examine driver speeding behavior, *Journal of Safety Research.*

J.17 **Lee, J.**, Munoz, M., Fridman, L., Victor, T., Reimer, B., and Mehler, B. (2018). Investigating drivers' head and glance correspondence, *PeerJ Computer Science 4:e146 https://doi.org/10.7717/peerj-cs.146.*

J.16 Lee, J., Lee, J. D., Bargman, J., **Lee, J.**, and Reimer, B. (2018). How safe is tuning a radio?: Using the radio tuning task as a benchmark for distracted driving, *Accident Analysis and Prevention, 110*, 29-37.

J.15 **Lee, J.**, Sawyer, B. D., Mehler, B., Angell, L., Seppelt, B. D., Fridman, L., and Reimer, B. (2017). Linking the detection response tasks and the AttenD buffer through assessing Human-Machine Interface workload, *Transportation Research Record, 2663*, 82-89.

J.14 Seppelt, B. D., Seaman, S., **Lee, J.**, Angell, S., Mehler, B., and Reimer, B. (2017). Glass half-full: On-road glance metrics differentiate crashes from near-crashes in the 100-Car data, *Accident Analysis and Prevention, 107*, 48-62.

J.13 **Lee, J.**, Roberts, S. C., Reimer, B., and Mehler, B. (2017). Does order matter? Investigating the effect of sequence on in-vehicle glance duration with on-road driving data, *PLoS ONE, 12*(2): e0171730. doi:10.1371/journal.pone.0171730.

J.12 Munoz, M., Reimer, B., **Lee, J.**, Mehler, B., and Fridman L. (2016). Distinguishing patterns in drivers' visual attention allocation using hidden Markov models, *Transportation Research Part F: Traffic Psychology and Behaviour, 43*, 90-103.

J.11 **Lee, J.**, Mehler, B., Reimer, B., Ebe, K., and Coughlin, J. F. (2016). Relationship between older drivers' cognitive abilities as assessed on the MoCA and glance patterns during visual-manual radio-tuning while driving, *The Journals of Gerontology, Series B: Psychological Sciences, gbw131.*

J.10 Fridman, L., **Lee, J.**, Reimer, B., and Mehler, B. (2016). A framework for robust driver gaze classification, *SAE Technical Paper 2016-01-1426, doi: 10.4271/2016-01-1426.*

J.9 Fridman, L., **Lee, J.**, Reimer, B., and Victor, T. (2016). "Owl" and "Lizard": Patterns of head pose and eye pose in driver gaze classification, *IET Computer Vision, 10*(4), 308-314.

J.8 Fridman, L., Langhans, P., **Lee, J**., and Reimer, B. (2016). Driver gaze estimation without using eye movement, *IEEE Intelligent Systems, 31*(3), 49-56.

J.7 Lee, J. D., McGehee, D. V., Brown, J. L., Richard, C. M., Ahmad, O., Ward, N. J., Hallmark, S., and **Lee, J**. (2011). Matching simulator characteristics to highway design problems, *Transportation Research Board, 2248/2011*, 53-60.

J.6 **Lee, J**., Kim, B., Lee, S., and Lee, J. (2008). The effect of age on judgment in driving: A simulation study, *Journal of the Korean Society of Safety, 23(1)*, 46-50.

J.5 **Lee, J**., and Lee, J. (2007). Analysis of age difference in road crossing behavior using signal detection theory, *Korean Journal of Industrial and Organizational Psychology, 20(3)*, 253-265.

J.4 **Lee, J**., and Lee, J. (2006). The effects of stimuli types and task difficulty on driver's memory search in dynamic driving situation, *Journal of the Korean Data Analysis Society, 8(1)*, 391-406.

J.3 **Lee, J**., and Lee, J. (2006). The effect of mariner's situation awareness training on navigation performances, *Korean Journal of Experimental Psychology, 18(3)*, 221-237.

J.2 **Lee, J**., Oh, J., and Lee, J. (2006). The effect of repeated mariner training using a ship-handling simulator system on ship control, *Journal of Korean Navigation and Port Research, 30(6)*, 427-432.

J.1 Gong, D., **Lee, J**., and Lee, J. (2005). A driving study on driver's subjective speed estimation as a function of the vehicle noise types and intensity, *Korean Journal of Psychological and Social Issues, 11(2)*, 31-46.

PEER REVIEWED CONFERENCE PROCEEDINGS

C.21 **Lee, J**., Venkatraman, V., and Richard, C. M. (2019). Predicting buckled and unbuckled trips of occasional seat belt users in SHRP2 data, *Human Factors and Ergonomics Society 63rd Annual Meeting.*

C.20 Richard, C. M., **Lee, J**., and Atkins, R. (2018). Predictors of observed speeding behavior in SHRP2 NDS data, *7th International Symposium on Naturalistic Driving Research.*

C.19 Richard, C. M., Atkins, R., **Lee, J**., and Brown, J. (2017). A framework for identifying speed-related crashes in the SHRP2 NDS driving event dataset, *10th SHRP2 Safety Data Symposium: From Analysis to Results.*

C.18 Lavalliere, M., Mehler, B., **Lee, J**., Seppelt, B. D., and Reimer, B. (2017). Task analysis of embedded visual-manual phone-calling interfaces in nine production vehicles, *27th CARSP Conference.*

C.17 Fridman, L., Toyoda, H., Seaman, S., Seppelt, B., Angell, L., **Lee, J**., Mehler, B., and Reimer, B. (2017). What can be predicted from six seconds of driver glances?, *2017 CHI Conference on Human Factors in Computing Systems (2805-2813), ACM.*
[Best Paper Award]

C.16 McWilliams, T., **Lee, J**., Mehler, B., and Reimer, B. (2017). Revisiting radio tuning: A secondary analysis comparing glance behavior across five vehicles, *Human Factors and Ergonomics Society 61th Annual Meeting.*

C.15 Seaman, S.,**Lee, J**., Seppelt, B., Angell, L., Mehler, B., and Reimer, B. (2017). It's all in the timing: Using the AttenD algorithm to assess texting in the NEST naturalistic driving database, *9th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design.*

C.14 Donmez, B., Mehler, A., **Lee, J**., Mehler, B., and Reimer, B. (2017). The relation between the driver behavior questionnaire, demographics, and driving history, *9th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design.*

C.13 **Lee, J**., Sawyer, B. D., Mehler, B., Angell, L., Seppelt, B. D., Fridman, L., and Reimer, B. (2017). Linking the detection response tasks and the AttenD buffer through assessing Human-Machine Interface workload, *Transportation Research Board 96th Annual Meeting*

C.12 Reimer, B., Pettinato, A., Seppelt, B., Fridman, L., **Lee, J**., Park, J., Iagnemma, K., and Mehler, B. (2016). Behavioral impact of drivers' roles in automated driving, *International Conference on Automative User Interfaces and Interactive Vehicular Applications.*

C.11 Seaman, S., **Lee, J**., Angell, L., Mehler, B., Seppelt, B., and Reimer, B. (2016). Exploring generalizability of field experiment radio tasks with naturalistic driving data: A comparison with SHRP2 NEST, *International Conference on Automative User Interfaces and Interactive Vehicular Applications.*

C.10 Domeyer, J., Seaman, S., Angell, L., **Lee, J**., Reimer, B., and Donmez, B. (2016). SHRP2 NEST Database: Exploring conditions of secondary task engagement in naturalistic trip data, *International Conference on Automative User Interfaces and Interactive Vehicular Applications.*

C.9 **Lee, J**., Mehler, B., Reimer, B., and Coughlin J. F. (2016). Sensation seeking and drivers' glance behavior while engaging in a secondary task, *Human Factors and Ergonomics Society 60th Annual Meeting.*

C.8 Lee, J. Y., **Lee, J**., and Lee, J. D. (2016). A visual search model for in-vehicle interfaces, *Human Factors and Ergonomics Society 60th Annual Meeting.*

C.7 Sawyer, B. D., **Lee, J**., Dobres, J., Mehler, B., Coughlin, J. F., and Reimer, B. (2016). Effects of a voice interface on mirror check decrements in older and younger multitasking drivers, *Human Factors and Ergonomics Society 60th Annual Meeting.*

C.6 Munoz, M., **Lee, J**., Reimer, B., Mehler, B., and Victor, T. (2015). Analysis of drivers' head and eye movement correspondence: Predicting drivers' glance location using head rotation data, *8th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design*, 203-209.
[Honda Outstanding Student Paper Award 1st Place]

C.5 Sinelnikova, A., **Lee, J**., Reimer, B., Mehler, B., and Coughlin, J. F. (2015). Predicting secondary task involvement and differences in task modality using field highway driving data, *8th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design*, 393-399.
[Honda Outstanding Student Paper Award 2nd Place]

C.4 **Lee, J**., Reimer, B., Mehler, B., Angell, L., Seppelt, B. D., and Coughlin J. F. (2015). Analyses of glance patterns of older and younger drivers during a visual-manual HMI interaction, *In Proceedings of Transportation Research Board 94th Annual Meeting*, No. 15-4781.

C.3 **Lee, J**., Lee, J. D., and Salvucci, D. D. (2013). A saliency-based search model: Application of the saliency map for driver-vehicle interfaces, *In Proceedings of Human Factors and Ergonomics Society 57th Annual Meeting, 57(1)*, 1933-1937.

C.2 **Lee, J**., Lee, J. D., and Salvucci, D. D. (2012). Evaluating the distraction potential of connected vehicles, *In Proceedings of the International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 33-40.
[Intel Outstanding Student Paper Award 1st Place]

C.1 **Lee, J**., Seppelt, B. D., and Lee, J. D. (2011). Computational model of drivers' visual attention for assessing simulator fidelity, *In Proceedings of Transportation Research Board 90th Annual Meeting*, No. 11-3962.

TECHNICAL REPORTS

T.7 Brown, J. L., Prendez, D. M., **Lee, J**., Romo, A., Campbell, J. L., Hutton, J., ... and Torbic, D. (2022). Human factors guidelines for road systems 2021 update, Volum 1: Updated and new chapters (NCHRP Project 17-80), *Report submitted to NCHRP, Battelle, Seattle, WA.*

T.6 Lee, J. D., Kamaraj, A. V., Alsaid, A., Liu, S.-Y., Price, M., and **Lee, J**. (2021). Observable and directable algorithms to promote user communication with vehicle automation, *Report submitted to Toyota CSRC, University of Wisconsin-Madison, Madison, WI.*

T.5 **Lee, J**., Schroeder, J. L., Richard, C. M., Campbell, J. L., Brown, J. L., Hoekstra-Atwood, L., Magee, K., and Prendez, D. M. (2021). Principles and guidance for presenting drivers with dynamic information on active traffic management (03-124), *Report submitted to NCHRP, Battelle, Seattle, WA.*

T.4 Richard, C. M., **Lee, J**., Brown, J. L., and Landgraf, A. (2020). Analysis of SHRP2 speeding data (DOT HS 812 858), *Report submitted to NHTSA, Battelle, Seattle, WA.*

T.3 Richard, C. M., Thomas, F. D., Blomberg, R. D., Brown, J. L., Wright, T., Graham, L., **Lee, J**., and Landgraf, A. (2019). Characteristics and predictors of occasional seat belt use using SHRP 2 Data (No. DOT HS 812 840)., *Report submitted to NHTSA, Battelle, Seattle, WA.*

T.2 Richard, C. M., Brown, J. L., **Lee, J**., Hoover, C., Campbell, J. L., Milton, J., and van Schalkwyk, I. (2016). SHRP2 implementation assistance program concept to countermeasure-Research to deployment using the SHRP 2 safety data (NDS): Influence of roadway design features on episodic speeding in Washington State (Phase 2 Report), *Report submitted to the Strategic Highway Research Program 2 (SHRP2) Transportation Research Board of the National Academies, Battelle, Seattle, WA.*

T.1 Mehler, B., Reimer, B., McAnulty, H., Dobres, J., **Lee, J**., and Coughlin, J. F. (2015). Assessing the demands of voice based in-vehicle interfaces - Phase II experiment 2 - 2014 Mercedes CLA (2014t), *MIT AgeLab Technical Report 2015-8 (November 10, 2015). Massachusetts Institute of Technology, Cambridge, MA.*

BOOK CHAPTERS

B.2 Campbell, J. L., Venkatraman, V., Hoekstra-Atwood, L., **Lee, J**., and Richard, C. M. (2020). HMI design for automated, connected, and intelligent vehicles, In *Handbook of Human Factors for automated, connected, and intelligent vehicles.*

B.1 **Lee, J**., Venkatraman, V., Campbell, J. L., and Richard, C. (2019). Workload and attention management in automated vehicles, In *Human performance in automated and autonomous systems: Current theory and methods.* CRC Press.

PATENT

P.2 Delgado, A. M. M., Reimer, B. L., **Lee, J.**, Angell, L. S., Seppelt B. D., Mehler, B. L., and Coughlin, J. F. (2020). United States Patent No. 20180053103, Systems and methods for providing visual allocation management. Retrieved from http://www.freepatentsonline.com/y2018/0053103.html

P.1 Seppelt B. D., **Lee, J.**, Angell, L. S., Reimer, B. L., Mehler, B. L., and Coughlin, J. F. (2020). United States Patent No. 10525984, Systems and methods for using an attention buffer to improve resource allocation management. Retrieved from http://www.freepatentsonline.com/10525984.html

ADVISING

2021-Current **Hansol Rheem, Ph.D.**, University of Wisconsin-Madison, Madison, WI.

- Advisor for a post-doctoral research fellow

2021-Current **Madeline Koenig**, University of Wisconsin-Madison, Madison, WI.

- Research mentor for an undergraduate researcher

2021-Current **Jessica Lee**, University of Wisconsin-Madison, Madison, WI.

- Research mentor an undergraduate researcher

2020-2021 **Sydney Tong**, University of Wisconsin-Madison, Madison, WI.

- Research mentor for an Undergraduate Research Scholar (URS) program

2020-2021 **Josalin Kumm**, University of Wisconsin-Madison, Madison, WI.

- Research mentor for an Undergraduate Research Scholar (URS) program; Mentee received Research Experience for Undergraduates fellowship (funded by NSF)

2015 **Alina Sinelnikova**, MIT, Cambridge, MA.

- Co-advisor for visiting master student; advised a part of the master thesis and a conference paper; resulted in a coauthored paper with fellow as first author and received Honda Outstanding Student Paper Award (2nd Place) from 8th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design

2015 **Mauricio Munoz**, MIT, Cambridge, MA.

- Co-advisor for visiting master student; advised a part of the master thesis and a conference paper; resulted in a coauthored paper with fellow as first author and received Honda Outstanding Student Paper Award (1st Place) from 8th International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design

PROFESSIONAL SERVICES

Diversity

AutoUI conference - Diversity co-chair

Journal reviewer

Accident Analysis and Prevention

Human Factors: The Journal of the Human Factors and Ergonomics Society

Transportation Research Part F: Traffic Psychology and Behaviour

Advances in Mechanical Engineering

ACM CHI (Human-Computer Interactions)

Transportation Research Board

Journal of Transportation Safety and Security

IEEE Transactions on Intelligent Transportation Systems

Service

Human Factors and Ergonomics Society 2021 - Surface Transportation Technical Group Best Student Paper Award Review Committee

Human Factors and Ergonomics Society 2020 - Chapanis Best Student Paper Award Committee

AutoUI 2019 - Program Committee (Associate Chair)

Human Factors and Ergonomics Society 2018 - Surface Transportation Technical Group Best Student Paper Awards Review Committee

Driving Assessment 2017 - Scientific Review Committee

Driving Assessment 2015 - Scientific Review Committee

Human Factors and Ergonomics Society 2015 - Perception and Performance Technical Group Best Student Paper Awards Review Committee

Human Factors and Ergonomics Society 2015 - Cognitive Engineering and Decision Making Technical Group Best Student Paper Awards Review Committee