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EDUCATION

Ph.D. , Industrial Engineering Purdue University , West Lafayette, IN	2021
M.S. , Psychology Purdue University , West Lafayette, IN	2020
M.S. , Safety Management Indiana University , Bloomington, IN	2016

PROFESSIONAL APPOINTMENTS

Assistant Professor , Department of Industrial & Systems Engineering San José State University, San Jose, CA	2021 – Present
Research Associate , Mineta Transportation Institute San José State University, San Jose, CA	
Faculty Affiliate , Center on Healthy Aging in Multicultural Population San José State University, San Jose, CA	

RESEARCH INTERESTS

Human factors, human-automation interaction, human behavior modeling, automated driving, successful aging, multimodal displays, human-machine interface, universal design

RESEARCH GRANTS/FUNDING

- **National Science Foundation (NSF)**. *CRII: HCC: Human-automation Interaction: Assistive and Adaptive Multimodal Interface to Support Older Adults in Complex Automated Systems* (Sole PI; \$174,800). 2022 – 2024.
- **SJSU Research, Scholarship, and Creativity Activity (RSCA) Level-Up Grant**. *Modeling Mind Wandering and Task Performance in Semi-Autonomous Driving* (PI; \$20,000). 2022 – 2023.
- **SJSU College of Engineering Small Group Project**. *A Teleoperated Robotic Training System for Percutaneous Needle Insertion Proficiency* (Co-PI; \$50,000). 2022
- **Industry funding**. *Details will be coming soon* (Sole PI; \$63,600). 2021 – 2022.
- **Mineta Transportation Institute Emerging Leaders Seed Grant – U.S. Department of Transportation**. *Exploring the Effects of Individual Differences on Tactile Display Perception in Automated Vehicles* (Sole PI; \$6,549). 2021 – 2022.
- **Mineta Transportation Institute Emerging Leaders Seed Grant – U.S. Department of Transportation**. *Investigating the Usability and Effectiveness of Public Transportation Technology in Older Adults during a Public Health Crisis* (PI; \$6,547). 2021 – 2022.
- **Link Foundation Fellowship in Modeling, Simulation, & Training**. *Using Advanced Driving Simulation and Vibrotactile Cues to Train Older Drivers to Interact with Next-Generation Autonomous Vehicles* (Link Foundation Fellow; \$30,000). 2020 – 2021.

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- **HFES Augmented Cognition Technical Group Student Grant Award.** *Physiological Responses Predict Mind Wandering during Semi-Autonomous Driving: Implications for Takeover Performance* (Sole PI; \$500). 2020.
 - **HFES Aging Technical Group Student Research Scholarship.** *The Influence of Non-chronological Age Factors on Mental States and Takeover Performance in Next-Generation Autonomous Driving* (Sole PI; \$500). 2019 – 2020

PUBLICATIONS AND PRESENTATIONS

Peer-Reviewed Journal Articles

1. **Huang, G.,** & Pitts, B. J. (2022). Takeover requests for automated driving: The effects of signal direction, lead time, and modality on takeover performance. *Accident Analysis and Prevention*. <https://doi.org/10.1016/j.aap.2021.106534>
2. **Huang, G.,** & Pitts, B. J. (2022). The Effects of Age and Physical Exercise on Multimodal Signal Responses: Implications for Semi-autonomous Vehicle Takeover Requests. *Applied Ergonomics*, 98. <https://doi.org/10.1016/J.APERGO.2021.103595>
3. Werner, L., **Huang, G.,** & Pitts, B. J. (2022). Smart Speech Systems: A Focus Group Study on Older Adult User and Non-User Perceptions of Speech Interfaces. *International Journal of Human-Computer Interaction*. (Accepted)
4. **Huang, G.,** Luster, M., Karagol, I., Park, J. W., & Pitts, B. J. (2020). Self-Perception of Driving Abilities in Older Age: A Systematic Review. *Transportation Research Part F: Traffic Psychology and Behaviour*, 74, 307–321. <https://doi.org/10.1016/j.trf.2020.08.020>
5. Smith, T. D., DeJoy, D. M., Dyal, M. A., & **Huang, G.** (2019). Impact of work pressure, work stress and work–family conflict on firefighter burnout. *Archives of Environmental & Occupational Health*, 74(4), 215-222. <https://doi.org/10.1080/19338244.2017.1395789>
6. **Huang, G.,** & Pitts, B. J. (Under Review). To Inform or to Instruct? An Evaluation of Meaningful Vibrotactile Patterns to Support Automated Vehicle Takeover Performance. *IEEE Transactions on Human-Machine Systems*.
7. Sridhar, H., **Huang, G.,** Thorpe, A., Oishi, M., & Pitts, B. J. (Under Review). Characterizing the Effect of Mind-wandering on Partially Autonomous Braking Dynamics. *IEEE Transactions on Human-Machine Systems*.

Peer-Reviewed Conference Proceedings

1. **Huang, G.,** & Pitts, B. J. (2021). Driver-Vehicle Interaction: The Effects of Physical Exercise and Takeover Request Modality on Automated Vehicle Takeover Performance between Younger and Older Drivers. In *2021 IEEE 2nd International Conference on Human-Machine Systems (ICHMS)* (pp. 1-4). IEEE. <https://doi.org/10.1109/ICHMS53169.2021.9582642>
2. **Huang, G.,** & Pitts, B. J. (2021). Automated Vehicle Takeover: A Pilot Study on the Effects of Age, Physical exercise, and Takeover Request Modality on Post-takeover Performance. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. <https://doi.org/10.1177/1071181321651012>
3. **Huang, G.,** Hung, Y. H., Proctor, R. W., & Pitts, B. J. (2021). Non-Chronological Age Factors and Self-perceived Driving Abilities: A Survey Study of Autonomous Vehicle Acceptance. *Technology, Mind, and Behavior*. <https://tmb.apaopen.org/pub/1rd4gowj>
4. **Huang, G.,** & Pitts, B. (2020). Age-Related Differences in Takeover Request Modality Preferences and Attention Allocation During Semi-autonomous Driving. In *International Conference on Human-*

- Computer Interaction* (pp. 135-146). Springer, Cham. https://doi.org/10.1007/978-3-030-50252-2_11
5. **Huang, G.**, & Pitts, B. J. (2020). The Effects of Engagement in Physical Exercise on Semi-autonomous Takeover Request Perception between Younger and Older Adults. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 27-27). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181320641007>
 6. **Huang, G.**, Petersen, C., & Pitts, B. J. (2020). The Impact of Mental States on Semi-autonomous Driving Takeover Performance: A Systematic Review. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 1372-1376). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181320641328>
 7. **Huang, G.**, Steel, C., Zhang, X., & Pitts, B. (2019). Multimodal Cue Combinations: A Possible Approach to Designing In-Vehicle Takeover Requests for Semi-Autonomous Driving. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 1739-1743). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181319631053>
 8. **Huang, G.**, Liang, N., Wu, C., & Pitts, B. (2019). The Impact of Mind Wandering on Signal Detection, Semi-autonomous Driving Performance, and Physiological Responses. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 2051-2055). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181319631015>
 9. Werner, L., **Huang, G.**, & Pitts, B. J. (2019). Automated Speech Recognition Systems and Older Adults: A Literature Survey and Synthesis. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 42-46). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181319631121>
 10. **Huang, G.**, & Pitts, B. (2019). Automated Speech Recognition Technology to Support in Flight Weather-related Communication for GA Pilots. In *20th International Symposium on Aviation Psychology*. (pp. 468-473). https://corescholar.libraries.wright.edu/isap_2019/79

Technical Reports & Thesis

1. **Huang, G.** (2021). *Aging and Automation: Non-chronological Age Factors and Takeover Request Modality Predict Transition to Manual Control Performance during Automated Driving* (Doctoral dissertation). <https://doi.org/10.25394/PGS.14879706.v1>
2. **Huang, G.** (2021). *Using Advanced Driving Simulation and Vibrotactile Cues to Train Drivers to Interact with Next-Generation Autonomous Vehicles*. <https://repository.lib.fit.edu/handle/11141/3439>

Academic Presentations and Posters

1. **Huang, G. (presenter)**, Hung, Y. H., Proctor, R. W., & Pitts, B. J. (2021). Non-Chronological Age Factors and Self-perceived Driving Abilities: A Survey Study of Autonomous Vehicle Acceptance. Oral presentation given at the *2021 Technology, Mind and Society Conference*. (Virtual). November.
2. **Huang, G. (presenter)**, & Pitts, B. (2021). Automated Vehicle Takeover: A Pilot Study on the Effects of Age, Physical exercise, and Takeover Request Modality on Post-takeover Performance. Oral presentation given at the *65th International Annual Meeting of the Human Factors and Ergonomics Society*. Baltimore, MD. October.
3. **Huang, G. (presenter)** (2021). Driver-Vehicle Interaction: The Effects of Physical Exercise and Takeover Request Modality on Automated Vehicle Takeover Performance between Younger and Older Drivers. Oral presentation given at the *2nd IEEE International Conference on Human-Machine Systems*. Magdeburg, Germany (Virtual). September.
4. **Huang, G. (presenter)** (2021). Age is Not Defined by a Number: Effects of Physical Exercise and

- Takeover Request Modality on Semi-autonomous Vehicle Takeover Performance. Oral presentation given at the 2nd *Annual Human Factors and Ergonomics Society Student Chapter Conference*. Virtual. April.
5. **Huang, G. (presenter)**, & Pitts, B. (2020). The Effects of Engagement in Physical Exercise on Semi-autonomous Takeover Request Perception between Younger and Older Adults. Oral presentation given at the 64th *International Annual Meeting of the Human Factors and Ergonomics Society*. Chicago, IL (Virtual). October.
 6. **Huang, G.**, Petersen (presenter), C., & Pitts, B. (2020). The Impact of Mental States on Semi-autonomous Driving Takeover Performance: A Systematic Review. Poster presented at the 64th *International Annual Meeting of the Human Factors and Ergonomics Society*. Chicago, IL (Virtual). October.
 7. **Huang, G. (presenter)**, & Pitts, B. J. (2020). Age-Related Differences in Takeover Request Modality Preferences and Attention Allocation During Semi-autonomous Driving. Oral presentation given at the 22nd *International Conference on Human-Computer Interaction*. Copenhagen, Denmark (Virtual). July.
 8. **Huang, G. (co-presenter)**, Liang, N., & Pitts, B. J. (2020). Physiological Monitoring During Autonomous Driving. Oral presentation given at the 106th *Purdue Road School Transportation Conference and Expo*. West Lafayette, IN. March.
 9. **Huang, G. (presenter)**, Steel, C., Zhang, X., & Pitts, B. J. (2019). Multimodal Cue Combinations: A Possible Approach to Designing In-Vehicle Takeover Requests for Semi-Autonomous Driving. Oral presentation given at the 63rd *International Annual Meeting of the Human Factors and Ergonomics Society*. Seattle, WA. October.
 10. **Huang, G. (presenter)**, Liang, N., Wu, C., & Pitts, B. J. (2019). The Impact of Mind Wandering on Signal Detection, Semi-autonomous Driving Performance, and Physiological Responses. Oral presentation given at the 63rd *International Annual Meeting of the Human Factors and Ergonomics Society*. Seattle, WA. October.
 11. **Huang, G. (presenter)**, & Pitts, B. J. (2019). Predicting Mind Wandering during Semi-autonomous Driving and Exploring Potential Mitigation Strategies. Oral presentation given at the 1st *Annual Conference on Next-Generation Transport Systems (NGTS-2019)*. West Lafayette, IN. May. **Won Outstanding Presenter Award.**
 12. **Huang, G. (presenter)**, & Pitts, B. (2019). Automated Speech Recognition Technology to Support in Flight Weather-related Communication for GA Pilots. Oral presentation given at the 20th *International Symposium on Aviation Psychology*. Dayton, OH. May.
 13. **Huang, G. (co-presenter)**, Liang, N., & Pitts, B. J. (2019). Assisted-Driving & Autonomous Vehicle Systems: Human Factors Considerations in Next-Generation Transportation. Poster presented at the 105th *Purdue Road School Transportation Conference and Expo*. West Lafayette, IN. March.
 14. **Huang, G. (presenter)**, & Pitts, B. J. (2018). Assessing the Capability of Automated Speech Recognition Weather Information Interfaces in GA Flight. Poster presented at the 2018 *The Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) Annual Meeting*. West Lafayette, IN. May.
 15. Smith, T.D. & **Huang, G. (co-presenter)** (2017). Bolstering occupational safety and health outcomes through effective multi-level leadership. Oral Presentation given at the 2017 *National Safety Council Congress & Expo*. Indianapolis, IN. September.

Patent

1. Xi, Z., Zhang, J., Yang, J., **Huang, G.** (2012). Tapered jet foam sol generating device for controlling coal dust at transferring point of conveyor belt

Invited Lectures & Keynote Addresses

1. **Huang, G.** (2019). Smart Home Technologies for Older Adults. Invited lecture in IE 590: Human Factors of Gerontechnology. West Lafayette, IN. October.

PRESENTATIONS, PUBLICATIONS, & AWARDS WITH MENTORED STUDENTS

1. Park, J., **Huang, G.**, & Pitts, B. J. (2019). Self-Perception of Manual Driving Abilities in Older Age: A Systematic Review. Poster presented at *the Annual Fall Undergraduate Research Expo*. West Lafayette, IN. November.
2. Gonzales, A., **Huang, G.**, Pitts, B. J. (2019). Augmented Reality in Semi-Autonomous Driving: The Effect of Warning Signal Format and Perceived Urgency on Takeover Performance. Poster presented at *Purdue Summer Undergraduate Research Fellowship Research Symposium*. West Lafayette, IN. August.
3. Richards, M., **Huang, G.**, Karagol, I., Pitts, B. J. (2019). Perception versus Reality: How do Older Drivers Self-perceive their Own Driving Abilities?. Poster presented at *Purdue Summer Research Opportunity Program's (SROP) Research Poster Symposium and Reception*. West Lafayette, IN. July.

AWARDS AND HONORS

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|---|-----------|
| • HFES Student Member with Honors Award | 2020 |
| • Dr. Theodore J. and Isabel M. Williams Fellowship in Industrial Engineering | 2020 |
| • Purdue Graduate School Incentive Grant Award | 2020 |
| • HFES Honor Student of Purdue Award | 2020 |
| • Purdue Graduate Student Government Professional Grant | 2019 |
| • Graduate Student Mentor of the Summer, Purdue University | 2019 |
| • Outstanding Speaker Award, 1st Annual Conference on Next-Generation Transport Systems | 2019 |
| • Travel Grant, School of Industrial Engineering, Purdue University | 2019 |
| • Outstanding Undergraduate Graduation Thesis (Design), Tianjin | 2014 |
| • Honor Student Award, Tianjin, China | 2014 |
| • People Scholarship, Tianjin, China | 2010-2013 |
| • Freshman Scholarship, Tianjin, China | 2011 |

TEACHING EXPERIENCE

San José State University

- ISE – 211 Experimental Design for Human Factors Engineering (graduate level)
- ISE – 210 Human Factors/Ergonomics (graduate level)
- ISE – 200 Financial Methods for Engineers (graduate level)
- ISE – 102 Engineering Economic Systems (undergraduate level)

Indiana University Bloomington

- SPH – H180 Stress Prevention & Management (undergraduate level)
- SPH – S151 Legal Aspect of Safety (undergraduate level)
- SPH – F255 Human Sexuality (undergraduate level; graduate teaching assistant)
- SPH – F341 Effects of Divorce on Children (undergraduate level; graduate teaching assistant)

MENTORING

Graduate Students

- Kimberly Martinez, Industrial & Systems Engineering (expected Spring 2023)
- Yuni Lee, Industrial & Systems Engineering (expected Spring 2023)
- Mia Dong, Industrial & Systems Engineering (expected Spring 2023)
- Keertana Sureshbabu, Industrial & Systems Engineering (expected Spring 2023)
- Vidya Krishnamoorthy, Industrial & Systems Engineering (expected Spring 2022)

Undergraduate Students

- Brenna Nettles-Miller, Industrial & Systems Engineering (expected Spring 2023)

SERVICE/ LEADERSHIP DEVELOPMENT

Professional Service

- **Journal Reviewer** 2020 – Present
 - *Applied Ergonomics*
 - *IEEE Transactions on Human-Machine Systems*
 - *International Journal of Human-Computer Interaction*
 - *International Journal of Industrial Ergonomics*
 - *Gerontechnology*
- **Conference Proceedings Reviewer** 2019 – Present
 - Human Factors and Ergonomics Annual Meeting (HFES) (2019, 2020, 2021)
- **Secretary/Treasurer**, HFES Aging Technical Group 2021 – Present
- **Session Chair**, HFES Annual Meeting 2021
 - *Aging Technical Group (ATG)*
- **Reviewer**, HFES Aging Technical Group Student Research Scholarship 2021
- **Reviewer**, HFES Augmented Cognition Technical Group Student Grant Award 2021
- **Committee Chair**, 1st Annual HFES Student Chapter Conference 2020
- **Volunteer**, HFES Fellows Task Force 2020
- **Co-chair**, HFES Annual Meeting 2019
 - *Perception and Performance Technical Group (PPTG)*
 - *Human Performance Modeling Technical Group (HPMTG)*
- **Student Volunteer**, the HFES Annual Meeting 2019

University-related Service

- **Faculty Advisor**, HFES San José State University Student Chapter 2021 – Present
- **Research Committee**, Charles W. Davidson College of Engineering, SJSU 2021 – Present
- **Judge Panel Member**, Spartan Step Up Conference, SJSU 2021
- **Lab Manager**, MHanCE Research Lab, Purdue University 2017 – 2021
- **Session Chair**, Purdue Summer Undergraduate Research Fellowship Research e-Symposium 2020
- **Co-President**, Human Factors & Ergonomics Society Purdue Student Chapter 2019 – 2020
- **Judge**, Purdue Summer Undergraduate Research Fellowship Research Symposium 2019

Community Service

- **Tech Team Volunteer**, Center on Aging and the Life Course (CALC), Purdue University 2019 – 2020
 - *Solving electronic equipment problems at senior living facilities*
- **Volunteer**, Purdue Space Day 2019
 - *STEM education outreach program for K-12 students*

CERTIFICATE/TRAINING

- Certificate of Foundations in College Teaching, Purdue University, West Lafayette, IN 2019

PROFESSIONAL MEMBERSHIPS

- Human Factors and Ergonomics Society (HFES) 2017 – Present
 - Aging Technical Group
 - Augmented Cognition Technical Group
 - Cognitive Engineering and Decision Making Technical Group
 - Perception and Performance Technical Group
 - Surface Transportation Technical Group
- Institute of Electrical and Electronics Engineers (IEEE) 2020 – Present
- International Society of Gerontechnology 2020 – Present
- National Safety Council (NSC) Member 2019 – Present
- American Society of Safety Professionals (ASSP) Member 2014 – 2017

WORK EXPERIENCE

Next-generation Human-systems and Cognitive Engineering (NHanCE) Lab <i>Graduate Research Assistant, Advisor: Dr. Brandon J. Pitts</i>	West Lafayette, IN Aug 2017 – June 2021
Human Performance Lab (HPL) <i>Graduate Student Research Fellow; Advisor: Dr. Robert Proctor</i>	West Lafayette, IN Aug 2018 – June 2021
Department of Applied Health Science <i>Graduate Research Assistant; Advisor: Dr. Todd Smith</i>	Bloomington, IN Aug 2015 – May 2016
Shanghai Yuanke Enterprise Management Consulting Co. Ltd. <i>Assistant Safety Consultant (Intern)</i>	Shanghai, China Feb 2014 – May 2014
Bureau of Safety Supervision, Government of Tianjin Binhai District <i>Summer Research Intern</i>	Tianjin, China Jun 2012 – Aug 2012

Updated March 2022