Wei-Hsiang Lo

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EDUCATION

Ph.D., Industrial and Operations Engineering (IOE) 2025–Present
University of Michigan, Ann Arbor, MI
Intelligence & Human Augmentation Lab (iHub)
Advisor: Manhua Wang, Ph.D.

M.S., Human Factors and Ergonomics 2025
San José State University, San José, CA
Behavior, Accessibility, and Technology (BAT) Lab
Advisor: Gaojian Huang, Ph.D.

B.A., Industrial Design 2021
Shih Chien University, Taipei

RESEARCH INTERESTS

Human automation interactions, automated driving, mental states, multimodal display, human behavior modeling

HONORS & AWARDS

- **Best Work in Progress - AutomotiveUI 2026** 2026
  Awarded for *Using Physiological Signals to Diagnose Driver Situation Awareness Deficits for Takeover Support in Automated Driving* by Wei-Hsiang Lo, Jincheng Ye, and Manhua Wang.
- **Rackham Conference Travel Grant - University of Michigan** 2025–2027
- **2nd Best Poster Award - HFES Western Region 2025** 2025
  The HFES Western Region awarded second place to a poster presenting related research; *A Multi-Modal Human-AI Collaboration Framework for E-Scooters: Evaluating AI Roles in User Preference* was later developed from the same study.
- **Donald Beall Student Award for Engineering Accomplishment - San José State University** 2025
- **SJSU Research and Innovation Student RSCA Fellowship - San José State University** 2024–2025
  The SJSU fellowship supported the related student-led research from which *Directional Vibrotactile Takeover Requests on a Wrist-Worn Device: Effects of Age, Pattern Type, and Urgency in Automated Driving* was later developed.
- **Best Video Award - AutomotiveUI 2024** 2024
  Awarded for *Multimodal Feedback for Effective Takeover in Automated Vehicles for Hearing Impairment* by A. Chu, Wei-Hsiang Lo, and Gaojian Huang.

PUBLICATIONS

Peer-Reviewed Journal Articles

- [J1] **Lo, W. H.**, Lee, J., Roberts, C., Dong, M., Martinez, K., Etu, E.-E., Mehrotra, S., Akash, K., Salubre, K., Misu, T., & Huang, G. (2026). Shared Control in Micro-Mobility: Effects of Rider Skill and Automation Levels on Subjective Well-Being in E-Scooter Use. *International Journal of Human-Computer Interaction*, 42(16), 13244–13271. https://doi.org/10.1080/10447318.2025.2601282

- [J2] **Lo, W. H.**, & Huang, G. (2025). Directional Vibrotactile Takeover Requests on a Wrist-Worn Device: Effects of Age, Pattern Type, and Urgency in Automated Driving. *Accident Analysis & Prevention*, 220, Article 108093. https://doi.org/10.1016/j.aap.2025.108093

- [J3] **Lo, W. H.**, & Huang, G. (2025). Vibration Patterns That Persuade: A National Survey of Driver Preferences for Wrist-Worn Vibrotactile Displays in Automated Vehicle Takeover. *International Journal of Human-Computer Interaction*, 1–21. https://doi.org/10.1080/10447318.2025.2598454

- [J4] **Lo, W. H.**, Xie, J., & Huang, G. (in press). Advisor, Co-pilot, or Guardian? AI Role Framing and Human Decision Behavior in Automated Vehicle Takeovers. *Journal of Safety Research*. Accepted for publication on October 27, 2026. Publication year, volume, issue, pages/article number, and DOI: TBD.

Peer-Reviewed Conference Proceedings

- [C1] **Lo, W. H.**, Ye, J., & Wang, M. (2026). What Drivers Know and Think They Know During Takeover: Effects of Spatial Risk, Temporal Risk, and NDRT on Situation Awareness. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. OnlineFirst. https://doi.org/10.1177/10711813261475148

- [C2] **Lo, W. H.**, Kiran, N., Fraser, D., Rampton, J. M., Lee, S. C., & Wang, M. (2026). Connecting Automotive HMI Research and Practice: A Workshop on Exploring Effective Academia-Industry Collaboration. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 390–393. https://doi.org/10.1145/3828158.3834794

- [C3] Ye, J., **Lo, W. H.**, & Wang, M. (2026). Driver-Adaptive Support Tree (DAST): From Driver Awareness to Adaptive Takeover Support. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 403–405. https://doi.org/10.1145/3828158.3833207

- [C4] **Lo, W. H.**, Plank, R., Rampton, J., Fraser, D., & Wang, M. (2026). From Papers to Production: Opportunities and Challenges in Academic Automotive HMI Research Translation - An Expert Interview. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 256–261. https://doi.org/10.1145/3828158.3838260

- [C5] **Lo, W. H.**, Ye, J., & Wang, M. (2026). Narrate-to-Sim: A Human Factors-Oriented Driving Simulator with Natural-Language-Supported Scenario Authoring. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 416–419. https://doi.org/10.1145/3828158.3833211

- [C6] **Lo, W. H.**, Ye, J., & Wang, M. (2026). Not All Situation Awareness Is the Same: Decoding Driver Awareness with Physiological Signals. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 434–436. https://doi.org/10.1145/3828158.3833055

- [C7] Ye, J., **Lo, W. H.**, & Wang, M. (2026). Student Research Track: Drivers' Correctness on Cue-Level Situation Awareness Probes: The Roles of Spatial Direction and Event State During Automated Driving Takeovers. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 441–444. https://doi.org/10.1145/3828158.3834800

- [C8] **Lo, W. H.**, Ye, J., & Wang, M. (2026). Using Physiological Signals to Diagnose Driver Situation Awareness Deficits for Takeover Support in Automated Driving. *Adjunct Proceedings of the 18th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 262–268. https://doi.org/10.1145/3828158.3838261
  Best Work in Progress

- [C9] **Lo, W. H.**, Xie, J., & Huang, G. (2026). Effects of AI Role and Speech Message Design on Takeover Requests in Automated Driving. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Volume, issue, and pages: TBD. https://doi.org/10.1177/10711813261485988

- [C10] **Lo, W. H.**, Chu, A., Luo, Y., Etu, E.-E., Attar, N., Liu, G., & Huang, G. (2025). The Impact of Mental States, Scenarios, and Modalities on Informative Takeover Requests in Automated Driving. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 69(1), 1486–1493. https://doi.org/10.1177/10711813251360008

- [C11] **Lo, W. H.**, Wang, Y., Wintersberger, P., & Huang, G. (2025). A Multi-Modal Human-AI Collaboration Framework for E-Scooters: Evaluating AI Roles in User Preference. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 69(1), 849–852. https://doi.org/10.1177/10711813251360714

- [C12] Huang, G., **Lo, W. H.**, Liu, G., Luo, Y., & Jin, Y. (2025). Toward AI Standardization: A Triadic Human-AI Collaboration Framework for Multi-Level Autonomous Mobility. *2025 IEEE Conference on Artificial Intelligence (CAI)*, 1568–1577. https://doi.org/10.1109/CAI64502.2025.00292

- [C13] **Lo, W. H.**, & Huang, G. (2024). Comparing Static and Dynamic Vibration Cues in Wristband Haptic Feedback for Enhanced Driver Response in Automated Vehicles. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 68(1), 958–959. https://doi.org/10.1177/10711813241268758

- [C14] **Lo, W. H.**, & Huang, G. (2024). A Survey on Perceptions of Smartwatch Haptic Feedback for Enhancing Automated Vehicle Takeover Decisions. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 68(1), 1276–1278. https://doi.org/10.1177/10711813241275929

- [C15] Chu, A., **Lo, W. H.**, & Huang, G. (2024). Assessing Meaningful Visual and Tactile Feedback for Effective Automated Vehicle Takeover by Hearing and Non-hearing Drivers. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 68(1), 1345–1346. https://doi.org/10.1177/10711813241268844

- [C16] Chu, A., **Lo, W. H.**, & Huang, G. (2024). Multimodal Feedback for Effective Takeover in Automated Vehicles for Hearing Impairment. *Adjunct Proceedings of the 16th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 304–306. https://doi.org/10.1145/3641308.3680515
  Best Video Award

- [C17] Zhang, Z., **Lo, W. H.**, & Huang, G. (2024). The Impact of Meaningful Vibrotactile Displays on User Preferences Across Age Groups in Automated Driving. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 68(1), 951–952. https://doi.org/10.1177/10711813241275919

Preprint Publications

- [P1] Chu, A., **Lo, W. H.**, & Huang, G. (2026). Multimodal Takeover Requests for Drivers with Hearing Loss: Implications for AI-Enabled Communication in Automated Vehicles. *arXiv*. arXiv:2608.30013. https://arxiv.org/abs/2608.30013

- [P2] Huang, G., Jin, Y., & **Lo, W. H.** (2025). Beyond Levels of Driving Automation: A Triadic Framework of Human-AI Collaboration in On-Road Mobility. *arXiv*. arXiv:2504.19120. https://arxiv.org/abs/2504.19120

Technical Reports

- [T1] **Lo, W. H.**, Chu, A., Luo, Y., Etu, E.-E., Attar, N., & Huang, G. (2025). Mental States & Machine: Enhancing Driver Engagement in Automated Vehicles for Safer Transitions. *ROSA / National Transportation Library*. Report REPS-HU-25-01. https://rosap.ntl.bts.gov/view/dot/86331
  Featured in the Transportation Research Board (TRB) Weekly, National Academies of Sciences, Engineering, and Medicine Newsletter 250930.

- [T2] Meda, P., Contreras, A. V., **Lo, W. H.**, Huang, G., & Luo, Y. (2025). Insights for the Future of Car Rental and Ridesharing: Driving Behavior Across Different Levels of Automation. *Mineta Transportation Institute*. Report 24-51. https://doi.org/10.31979/mti.2024.2427
  Featured in the Transportation Research Board (TRB) Weekly, National Academies of Sciences, Engineering, and Medicine Newsletter 250311.

- [T3] Meda, P., Contreras, A. V., **Lo, W. H.**, Huang, G., & Luo, Y. (2025). Insights for the Future of Car Rental and Ridesharing: Driving Behavior Across Different Levels of Automation [Research Brief]. *Mineta Transportation Institute*. Research Brief · Project 2427. https://rosap.ntl.bts.gov/view/dot/80460

TEACHING EXPERIENCE

- **University of Michigan**, Ann Arbor, MI
  [GSI] Graduate Student Instructor, IOE – 333 Human Factors Ergo
  Lecturer: Manhua Wang, Ph.D. Winter 2026

- **National Taiwan University**, Taipei
  [TA] Teaching Assistant, THEA – 1118 Visual Identity Design
  Lecturer: Kevin Lin Spring 2023

ACADEMIC PRESENTATIONS

Lecture *2024–Present*

- Wang, X., Lo, C., **Lo, W. H.**, Wang, M., & Huang, G. (2026). Design Principles and Measure Frameworks for Human-Centered AI and Human-AI Interaction: A Systematic Review. *HFES ASPIRE 2026 Annual Meeting · October 22, 2026*. Conference program
  Co-author; not presenter

- **Lo, W. H.**, Xie, J., & Huang, G. (2026). Effects of AI Role and Speech Message Design on Takeover Requests in Automated Driving. *HFES ASPIRE 2026 Annual Meeting · October 21, 2026*. Conference program
  Presenter

- **Lo, W. H.**, & Huang, G. (2025). Assessing AI Roles in a Multi-Modal Human-AI Collaboration Framework for E-Scooters. *2025 IEEE 21st International Conference on Automation Science and Engineering (CASE)*.
  Co-author; not presenter
  Presented by Gaojian Huang

- **Lo, W. H.**, & Huang, G. (2025). Age-Driven Takeover Optimization in Automated Driving: Smart Wearables and Vibrotactile Feedback for Enhanced Safety. *2025 PSR UTC Annual Congress*.
  Presenter

- **Lo, W. H.**, & Huang, G. (2024). Comparing Static and Dynamic Vibration Cues in Wristband Haptic Feedback for Enhanced Driver Response in Automated Vehicles. *HFES Annual Meeting*. https://doi.org/10.1177/10711813241268758
  Presenter

- Zhang, Z., **Lo, W. H.**, & Huang, G. (2024). The Impact of Meaningful Vibrotactile Displays on User Preferences Across Age Groups in Automated Driving. *HFES Annual Meeting*. https://doi.org/10.1177/10711813241275919
  Presenter

Poster *2024–Present*

- **Lo, W. H.**, Ye, J., & Wang, M. (2026). What Drivers Know and Think They Know During Takeover: Effects of Spatial Risk, Temporal Risk, and NDRT on Situation Awareness. *HFES ASPIRE 2026 Annual Meeting · October 22, 2026*. Conference program
  Presenter

- **Lo, W. H.**, Ye, J., & Wang, M. (2026). Using Physiological Signals to Diagnose Driver Situation Awareness Deficits for Takeover Support in Automated Driving. *AutomotiveUI 2026 · Work in Progress*. https://doi.org/10.1145/3828158.3838261
  Presenter
  Best Work in Progress

- **Lo, W. H.**, Plank, R., Rampton, J., Fraser, D., & Wang, M. (2026). From Papers to Production: Opportunities and Challenges in Academic Automotive HMI Research Translation - An Expert Interview. *AutomotiveUI 2026 · Work in Progress*. https://doi.org/10.1145/3828158.3838260
  Presenter

- Ye, J., **Lo, W. H.**, & Wang, M. (2026). Student Research Track: Drivers' Correctness on Cue-Level Situation Awareness Probes: The Roles of Spatial Direction and Event State During Automated Driving Takeovers. *AutomotiveUI 2026 · Student Research Track*. https://doi.org/10.1145/3828158.3834800
  Co-author; not presenter
  Presented by Jincheng Ye

- **Lo, W. H.**, & Huang, G. (2025). Enhancing E-Scooter Safety with AI-Driven Systems: A National Survey on User Preferences for Multi-Modal Human-Machine Interfaces. *HFES Western Region Annual Meeting*.
  Presenter
  2nd Best Poster Award

- **Lo, W. H.**, & Huang, G. (2024). A Survey on Perceptions of Smartwatch Haptic Feedback for Enhancing Automated Vehicle Takeover Decisions. *HFES Annual Meeting*. https://doi.org/10.1177/10711813241275929
  Presenter

- Chu, A., **Lo, W. H.**, & Huang, G. (2024). Assessing Meaningful Visual and Tactile Feedback for Effective Automated Vehicle Takeover by Hearing and Non-hearing Drivers. *HFES Annual Meeting*. https://doi.org/10.1177/10711813241268844
  Presenter
  Co-presenter: Aries Chu

Workshop *2026–Present*

- **Lo, W. H.**, Kiran, N., Fraser, D., Rampton, J. M., Lee, S. C., & Wang, M. (2026). Connecting Automotive HMI Research and Practice: A Workshop on Exploring Effective Academia-Industry Collaboration. *AutomotiveUI 2026 · Workshop*. https://doi.org/10.1145/3828158.3834794

Demo & Video *2024–Present*

- Ye, J., **Lo, W. H.**, & Wang, M. (2026). Driver-Adaptive Support Tree (DAST): From Driver Awareness to Adaptive Takeover Support. *AutomotiveUI 2026 · Interactive Demo*. https://doi.org/10.1145/3828158.3833207
- **Lo, W. H.**, Ye, J., & Wang, M. (2026). Narrate-to-Sim: A Human Factors-Oriented Driving Simulator with Natural-Language-Supported Scenario Authoring. *AutomotiveUI 2026 · Interactive Demo*. https://doi.org/10.1145/3828158.3833211
- **Lo, W. H.**, Ye, J., & Wang, M. (2026). Not All Situation Awareness Is the Same: Decoding Driver Awareness with Physiological Signals. *AutomotiveUI 2026 · Video*. https://doi.org/10.1145/3828158.3833055
- Chu, A., **Lo, W. H.**, & Huang, G. (2024). Multimodal Feedback for Effective Takeover in Automated Vehicles for Hearing Impairment. *AutomotiveUI 2024 · Video*. https://doi.org/10.1145/3641308.3680515

SERVICE/LEADERSHIP DEVELOPMENT

Professional Service

- Journal Reviewer (2024): *Transportation: Planning – Policy – Research – Practice*
- Conference Proceedings Reviewer (2023–Present):
  - Human Factors and Ergonomics Society Annual Meeting (ASPIRE)
  - IEEE International Conference on Human-Machine Systems (IEEE ICHMS)
  - International ACM Conference on Automotive User Interfaces (AutomotiveUI)
  - IEEE Intelligent Vehicles Symposium (IEEE IV 2024)
- Student Volunteer: 2026 International ACM Conference on Automotive User Interfaces (AutomotiveUI)
- Conference Session Co-Chair: 2024 HFES Annual Meeting – Surface Transportation Technical Group
- Student Volunteer: 2024 International ACM Conference on Automotive User Interfaces (AutomotiveUI)

PROFESSIONAL MEMBERSHIPS

- Human Factors and Ergonomics Society (HFES) *2023–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) *2023–Present*
- Association for Computing Machinery (ACM) *2023–Present*

WORK EXPERIENCE

- **Intelligence & Human Augmentation Lab (iHub)**, Ann Arbor, MI
  Graduate Research Assistant, Advisor: Dr. Manhua Wang — Aug. 2025–Present
- **Behavior, Accessibility, and Technology (BAT) Lab**, San José, CA
  Laboratory Manager, Advisor: Dr. Gaojian Huang — Feb. 2024–Aug. 2025
  Graduate Research Assistant, Advisor: Dr. Gaojian Huang — Oct. 2023–Aug. 2025