Connor Esterwood

PhD Candidate :: School of Information :: University of Michigan

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Education

Ph.D., University of Michigan
School of Information
Concentration: Human-Robot Interaction
Advisor: Dr. Lionel P. Robert Jr

Projected: 2024

M.S., University of Tennessee, Knoxville
School of Information Science
Concentration: User Experience and Assessment
Advisor: Dr. Dania Bilal

Conferred: 2018

B.A., University of North Carolina, Asheville
Department of Interdisciplinary Studies
Concentration: International Relations
Advisor: Dr. Surain Subramaniam

Conferred: 2013

Selected Honors and Awards

Rackham Post-Candidacy Research Grant
Award funding pre-candidacy research. - $3,000

2023

Outstanding Reviewer: HRI 2023
Honor given for "high quality reviews that were particularly insightful,
constructive, and thorough".

2023

Rackham Conference Travel Grant,
Award funding travel for presenting at conferences. - $1,050

2020, 2022, 2023

School of Information Travel Grant,
Award funding travel for presenting at conferences. - $350

2022, 2023

Rackham Pre-Candidate Research Grant,
Award funding pre-candidacy research. - $1,500

2020

Research Artifact(s)

[Ra.1] Warehouse Robot Interaction Sim: An Open-Source HRI Research Platform,
https://github.com/ConnorEsterwood/The-ROBOT-SIM.

Research Publications

Peer-Reviewed Journal Articles

[J1] **Esterwood, C., &** Robert Jr, L. P. **(2023). The theory of mind and human–robot trust repair.** *Scientific Reports*, 13(1), 9877.

[J2] **Esterwood, C.,** & Robert Jr, L. P. (2023). **Three Strikes and you are out!: The impacts of multiple human–robot trust violations and repairs on robot trustworthiness**. *Computers in Human Behavior,* 142, 107658.

[J3] Zhang, Q., **Esterwood, C.**, Pradhan, A. K., Tilbury, D., Yang, X. J., & Robert, L. P. (2023). **The Impact of Modality, Technology Suspicion, and NDRT Engagement on the Effectiveness of AV Explanations.** *IEEE Access*. 11, 81981-81994.

[J4] **Esterwood, C.**, Essenmacher, K., Yang, H., Zeng, F., & Robert, L. P. (2022). **A Personable Robot: Meta-analysis of Robot Personality and Human Acceptance.** *IEEE Robotics and Automation Letters*, 7(3), 6918-6925.

[J5] **Esterwood, C.**, & Robert, L. P. (2021) **A Systematic Review of Human and Robot Personality in Health Care Human-Robot Interaction**. *Frontiers in Robotics and AI,* 8, 748246.

[J6] **Esterwood, C.,** Yang, X. J., & Robert, L. P. (2021). **Barriers to AV Bus Acceptance: A National Survey and Research Agenda.** *International Journal of Human–Computer Interaction*, 37(15), 1391-1403.

[J7] **Esterwood, C.,** & Robert, L. (2021). **Robots and COVID-19: Re-imagining human-robot collaborative work in terms of reducing risks to essential workers.** *ROBONOMICS: The Journal of the Automated Economy*, 1, 9.

[J8] Azevedo-Sa, H., Zhao, H., **Esterwood, C.**, Yang, X. J., Tilbury, D. M., & Robert Jr, L. P. (2021). **How internal and external risks affect the relationships between trust and driver behavior in automated driving systems.** *Transportation Research Part C: Emerging Technologies*, 123, 102973.

[J9] Robert Jr, L. P., Alahmad, R., **Esterwood, C.,** Kim, S., You, S., & Zhang, Q. (2020). **A Review of Personality in Human–Robot Interactions.** *Foundations and Trends® in Information Systems*, **(Top 10 SSRN Download List: April 2020 & July 2020)** 4(2), 107-212.

[J10] Azevedo-Sa, H., Jayaraman, S., **Esterwood, C**., Yang, X. J., Robert, L. P. and Tilbury, D. (2020). **Real-Time Estimation of Drivers' Trust in Automated Driving Systems,** *International Journal of Social Robotics,* 13(8), 1911-1927.

[J11] Abiri, R., Borhani, S., Kilmarx, J., **Esterwood, C.,** Jiang, Y., & Zhao, X. (2020). **A usability study of low-cost wireless brain-computer interface for cursor control using online linear model.** *IEEE Transactions on Human-Machine Systems,* 50(4), 287-297.

Highly Peer-Reviewed Conference Proceedings

[C1] **Esterwood, C**. and Robert, L. P. (2022). **A Literature Review of Trust Repair in HRI,** *Proceedings of 31th IEEE International Conference on Robot and Human Interactive Communication* (**RO-MAN 2022**).

[C2] **Esterwood, C.,** & Robert, L. P. (2022). **Having the Right Attitude: How Attitude Impacts Trust Repair in Human–Robot Interaction.** *Proceedings of the 17th ACM/IEEE International Conference on Human-Robot Interaction* (**HRI 2022**).

[C3] **Esterwood, C.,** Essenmacher, K., Yang, H., Zeng, F. and Robert, L. P. (2021). **Birds of a Feather Flock Together: But do Humans and Robots? A Meta-Analysis of Human and Robot Personality Matching,** *Proceedings of 30th IEEE International Conference on Robot and Human Interactive Communication* (**RO-MAN 2021**).

[C4] **Esterwood, C.** and Robert, L. P. (2021). **Do You Still Trust Me? Human-Robot Trust Repair Strategies,** *Proceedings of 30th IEEE International Conference on Robot and Human Interactive Communication* (**RO-MAN 2021**).

[C5] **Esterwood, C.,** Essenmacher, K., Yang, H., Zeng, F., & Robert, L. (2021). **A Meta-Analysis of Human Personality and Robot Acceptance in Human-Robot Interaction.** *The 2021 ACM CHI Virtual Conference on Human Factors in Computing Systems* (**CHI 2021**).

[C6] **Esterwood, C.** and Robert, L. P. (2020). **Personality in Healthcare Human Robot Interaction (H-HRI): A Literature Review and Brief Critique.** I*n Proceedings of the 8th International Conference on Human- Agent Interaction* (**HAI 2020**).

[C7] Zhang, Qiaoning, **Esterwood, Connor,** Yang, X. Jessie, & Robert Jr, Lionel P. (2019). **An Automated Vehicle (AV) like Me? The Impact of Personality Similarities and Differences between Humans and AVs.** *Association for the Advancement of Artificial Intelligence Symposium* (**AAAI-Symposium 2019**).

[C8] Zhao, H., Azevedo-Sa, H., **Esterwood, C.,** Yang, X. J., Robert, L., & Tilbury, D. (2019). **Error Type, Risk, Performance, and Trust: Investigating the Different Impacts of false alarms and misses on Trust and Performance.** *Ground Vehicle Systems Engineering and Technology Symposium.* (**GVSETS 2019**).

Lightly Peer-Reviewed Shortpaper and Conference Proceedings

[S1] **Esterwood, C.,** Ali, A., George, Z., Dubrow, S., Smereka, J., Riegner, K., Tilbury, D. and Robert, L.P. (2023). **Promises and Trust Repair in UGVs**. *In Proceedings of the HFES 67th Annual Meeting of the Human Factors and Ergonomics Society* (**HFES 2023**).

[S2] **Esterwood, C.,** & Robert, L. (2023). **The Warehouse Robot Interaction Sim: An Open-Source HRI Research Platform.** *In Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction* (**HRI 2023**).

[S3] Bagchi, S., Holthaus, P., ... **Esterwood, C.,** ... and Piridham, P. (2023). **Towards Improved Replicability of Human Studies in Human-Robot Interaction.** *In Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction* (**HRI 2023**).

[S4] **Esterwood, C.** and Robert, L. P. (2020). **Human Robot Team Design,** *Proceedings of the 8th International Conference on Human-Agent Interaction*, (**HAI 2020**).

[S5] Azevedo-Sa, H., Jayaraman, S., **Esterwood, C.,** Yang, X.J. and Robert, L. P., and Dawn M. Tilbury (2020). **Comparing the Effects of False Alarms and Misses on Humans' Trust in (Semi)Autonomous Vehicles.** *In Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction* **(HRI 2020).**

Peer-Reviewed Workshop Papers

[W1] **Esterwood, C.,** Robert, Robert Jr, Lionel P. (2021). **Fool Me Three Times: Human-Robot Trust Repair & Trustworthiness Over Multiple Violations and Repairs.** *Conference on Neural Information Processing Systems* **(NEURIPS 2021).**

[W2] **Esterwood, C.,** Robert, Robert Jr, Lionel P. (2021). **Trust Repair in Human-Robot Interaction.** *The Institute for Operations Research and the Management Sciences Annual Meeting* **(INFORMS 2022)** [INVITED TALK].

Books and Chapters

[B1] **Esterwood, C.** and Robert, L. P. (2023). **Human–Robot Interaction,** in *C Stephanidis & G Salvendy (Eds.), Human-Computer Interaction: Foundations, Methods, Technologies, and Applications.* **CRC Press**

Teaching Experience

Graduate Student Instructor, *SI 310: Information Environments and Work* School of Information, University of Michigan Attendance: 49 (2 Groups),	*Fall 2022* **[Avg. Rating: 4.9/5]**

Mentoring

Hongjiao Qiang	MS ECE, UMICH	*2023-Present*
Zariq George	PhD ROB, UMICH	*2022-Present*
Arsha Ali	PhD ROB, UMICH	*2022-Present*
Hana Kassie	AURA Student, UMICH	*2023, Summer*

Service

Organizing Committee for International Conferences

ACM/IEEE International Conference on Human-Robot Interaction (HRI) *Short Contributions Co-Chair	HRI Datasets and Code*	*2024*

Member of Thesis Examination Committee

Xin Ye, University of Michigan, School of Information	*2023*

Workshops /Tutorials at International Conferences

International Workshop on Multidisciplinary Perspectives on Human-AI Team Trust (MULTITRUST at HHAI) | *Program Committee Member*   *2023*

Working Group Memberships

IEEE/NIST | P3108 Recommended Practice for Human-Robot Interaction Design of Human Subject Studies | *Working Group Member*   *2021-Present*

Student Volunteering for International Conferences

ACM Conference on Research and Development in Information Retrieval (SIGIR) | *Student Volunteer*   *2018*

Ad-hoc Reviewer

International Journal of Human-Computer Interaction | ACM Transactions on Human-Robot Interaction | IEEE Transactions on Human-Machine Systems | International Symposium on Robot and Human Interactive Communication (ROMAN) | ACM/IEEE International Conference on Human-Robot Interaction (HRI) | International Conference on Information Systems (ICIS) | IEEE Transactions on Neuroscience | Transportation Prat C | AIS Transactions on Human-Computer Interaction | European Conference on Information Systems (ECIS) | International Conference on Design Science Research in Information Systems and Technology (DESRIST) | ACM Special Interest Group on Computer-Human Interaction (CHI) | IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) | IEEE International Conference on Robotics and Automation (ICRA) | Human-Factors and Ergonomics International Annual Meeting (HFES) | Pacific Asia Conference on Information Systems (PACIS) | Advanced Robotics and its Social Impacts (ARSO) | Human-Machine Communication | IEEE Transactions on Social Computing | Frontiers in Neurorobotics | Frontiers in Robotics and AI | Journal of the Association for Information Systems | Hawaii International Conference on System Sciences (HICSS) | Ergonomics

Selected Press Coverage of Research

Communications of the ACM
Trust Is Hard to Restore After Robot Co-Worker Makes Mistakes | LINK |

Current Science Daily
U. of Michigan study: Humans not tolerant of robot mistakes | LINK |

ArsTechnica
When robots screw up, how can they regain human trust? | LINK |

World Economic Forum
Here's why we struggle to trust robots after a few mistakes | LINK |

University of Michigan News
Robots who goof: Can we trust them again? | LINK |
Robot: I'm sorry. Human: I don't care anymore! | LINK |

Robotics and Automation News

Three strikes and you're out! Humans give up on robots after multiple mistakes | LINK |

HiTecher
The distrust of robots among AI users is growing | LINK |