

Erin T. Solovey

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Worcester Polytechnic Institute
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Curriculum Vitae

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RESEARCH INTERESTS

Human-Computer Interaction, Human-AI Interaction, Machine Learning, Brain-Computer Interfaces, Accessibility, Novel Interaction Modes & Techniques, Adaptive User Interfaces, Physiological and Wearable Computing, Future of Work, STEM Education, Broadening Participation in Computing.

EDUCATION

MIT, Cambridge, MA	CSAIL, AeroAstro, Humans & Automation Lab	Postdoctoral Fellow	2011- 2013
Tufts University, Medford, MA	Computer Science	Ph.D.	2012
Tufts University, Medford, MA	Computer Science	M.S.	2007
Harvard University, Cambridge, MA	Computer Science	A.B.	2001

EMPLOYMENT

Harvard University, Cambridge, MA

Harvard-Radcliffe Institute Fellow, Radcliffe Institute for Advanced Study **2024-2025**

Worcester Polytechnic Institute, Worcester, MA

Associate Professor of Computer Science (with tenure) **2022-present**
Assistant Professor of Computer Science **2018-2022**

Affiliated Interdisciplinary Programs: Neuroscience, Bioinformatics & Computational Biology, Learning Sciences & Technologies, Robotics Engineering, Interactive Media & Game Development

Drexel University, Philadelphia, PA

Assistant Professor of Computer Science **2014-2018**
Director, Advanced Interaction Research Lab
Affiliated Research Assistant Professor, School of Biomedical Engineering, Science and Health Systems

Massachusetts Institute of Technology, Cambridge, MA

NSF/CRA Computing Innovation Postdoctoral Fellow, Humans & Automation Lab, Postdoctoral Mentor: Dr. Mary (Missy) Cummings **2011-2013**

Tufts University Computer Science Department, Medford, MA

Graduate Research Assistant, Human-Computer Interaction Lab **2005-2011**
Advisor: Dr. Robert Jacob

Bluefin Labs (acquired by Twitter), Cambridge, MA

User Interface Design & Development **Summer, 2010**

Microsoft Research, Redmond, WA

Research Intern, Mentors: Desney Tan, Dan Morris **Summer, 2008**

Boston Museum of Science, Boston, MA

Technical Intern for Exhibit Development **2007-2008**

MIT Lincoln Laboratory, Lexington, MA <i>Graduate Research Program</i>	Summer, 2006
Oracle Corporation, Redwood Shores, CA and Burlington, MA <i>Senior Applications Engineer, Oracle Learning Architecture</i>	2001-2005
Oracle Corporation, Redwood Shores, CA <i>Summer Intern, Manufacturing Applications</i>	Summer, 2000
Sun Microsystems, Cupertino, CA <i>Summer Intern, Java Software Division, Web Engineering</i>	Summer, 1999
Planet Direct / MyWay.com (A CMGI Company), Andover, MA <i>Java Component Development Team Intern</i>	Summer, 1998

GRANTS AND FELLOWSHIPS

External Awards

- [EG9] **Harvard-Radcliffe Institute for Advanced Study Fellowship**, Harvard University. 2024-25.
- [EG8] **EEC-2419292 RET Site: Engineering for People and the Planet: Research Experiences for Teaching Integrated STEM**. National Science Foundation. Role: PI. Co-Investigator: Katherine Chen (WPI). 6/1/2024-5/31/2027. (Total Award: \$599,919).
- [EG7] **DUE-2322665 Creating a Path to Achieving Success and Sense of Belonging in Computer Science**. National Science Foundation. Role: Senior Personnel. PI: Rodica Neamtu, Co-PIs: Debra Boucher, Crystal Brown. 1/1/2024-12/31/2029. (Total Award: \$2,500,000).
- [EG6] **EEC-2055507 RET Site: Engineering for People and the Planet: Research Experiences for Teaching Integrated STEM**. National Science Foundation. Role: PI. Co-Investigator: Katherine Chen (WPI). 1/1/2022-12/31/2025. (Total Award: \$599,980).
- [EG5] **Snap Creative Challenge Award**. Snap, Inc. Role: PI. Co-Investigators: Ali Shokoufandeh (Drexel), Genevieve Dion (Drexel), Shruti Mahajan (WPI), Denisa Qori McDonald (Drexel), Richard Vallett (Drexel).
- [EG4] **IIS-1901026 CHS: Medium: Improving Information Accessibility with Sign Language First Technology**. National Science Foundation. Role: PI. Co-Investigator: Jeanne Reis (ASL Education Center). 10/1/2019-9/30/2024. (Total Award: \$1,016,590).
- [EG3] **1835307 NCS-FO: Integrating Non-Invasive Neuroimaging and Educational Data Mining to Improve Understanding of Robust Learning Processes**. National Science Foundation. Role: PI. 9/1/2018-8/31/2023. Co-Investigators: Erin Walker (Pittsburgh), Catherine Arrington (Lehigh). (Total Award: \$1,031,676, WPI: \$680,167).
- [EG2] **CNS-1711773 Research Experience for Teachers Site for Machine Learning to Enhance Human-Centered Computing**. National Science Foundation. Role: Co-PI. PI: Jeffrey Popyack (Drexel). 7/1/2017-6/30/2020. \$599,979.
- [EG1] **Computing Innovation Fellowship**, Computing Research Association (CRA) & National Science Foundation (NSF). \$140,000 over 2 years. Supported my postdoctoral fellowship at MIT.

Internal Awards

- [IG3] **Closed-Loop BCI Using Adaptive Kinetic Architectural Design to Regulate Human Emotional States**. WPI TRIAD. Role: Co-PI. PI: Ali Yousefi. Co-I: Mohamad Farzinmoghadam (Total Award: \$60,000).
- [IG2] **Towards Biometric Input for Multi-Agent Adaptive Human-Robot Collaboration**. Joint WPI-UMass Lowell Seed Funding. Role: PI. Co-Investigators: Pei-Chun Kao (UMass-Lowell), Yanhua Li (WPI), Rodica Neamtu (WPI), Adam Norton (UMass-Lowell), Yi-Ning Wu (UMass-Lowell), Holly Yanco (UMass-Lowell). 6/1/2019- 5/31/2020. (Total Award: \$20,000, WPI: \$10,000).
- [IG1] **Research Co-op Award**. Drexel University Steinbright Center. Role: PI. 2017. \$7,250.

PUBLICATIONS

Journal Articles

- [J21] Sonmez Unal, D., **Solovey, E.**, Arrington, C.M., Walker, E. Modeling the phases of rule learning during problem solving with an interactive learning environment. *User Model User-Adap Inter* 35, 7 (2025).
- [J20] Micek, C., **Solovey, E.T.** (2024) Examining the Impact of Digital Jury Moderation on the Polarization of U.S. Political Communities on Social Media. *Interacting with Computers*.
- [J19] Putze, F., Putze, S., Sagehorn, M., Micek, C., **Solovey, E.T.** (2022) Understanding HCI Practices and Challenges of Experiment Reporting with Brain Signals: Towards Reproducibility and Reuse. *ACM Transactions on Computer-Human Interaction (TOCHI)*. 41 pages.
- [J18] Wei, H., Li, Z., Galvan, A.D., Su, Z., Zhang, X., Pahlavan, K., **Solovey, E.T.** (2022). IndexPen: Two-Finger Text Input with Millimeter-Wave Radar. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 6, 2, Article 79 (July 2022), 39 pages.
- [J17] Plácido da Silva, H., Garcia N.M. and **Solovey E.T.** (2021). Editorial: Biomedical Signals for Human-Computer Interaction. *Frontiers in Computer Science* 3:799952. 2 pages.
- [J16] **Solovey, E.T.**, Putze, F. (2021). Improving HCI with Brain Input: Review, Trends, and Outlook. *Foundations and Trends in Human-Computer Interaction*, Vol. 13: No. 4, pp298-379.
- [J15] Moradinezhad, R., **Solovey, E.T.** Investigating Trust in Interaction with Inconsistent Embodied Virtual Agents. *International Journal of Social Robotics (SORO)*. 16 pages.
- [J14] Liu, R., Reimer, B., Song, S., Mehler, B., **Solovey, E.T.** (2020). Unsupervised fNIRS feature extraction with CAE and ESN autoencoder for driver cognitive load classification. In *Journal of Neural Engineering*, 18, 036001. 15 pages.
- [J12] McDonald, D.Q., Vallett, R., **Solovey, E.T.**, Dion, G., Shokoufandeh, A. (2020). Knitted Sensors: Designs and Novel Approaches for Real-Time, Real-World Sensing. *Interact. Mob. Wearable Ubiquitous Technol.* 4 (4), Article 145 (December 2020), 25 pages.
- [J13] **E.T. Solovey**, K.J. Ryan, M. Cummings. (2020). CODA: Mobile Interface for Enabling Safer Navigation of Unmanned Aerial Vehicles in Real-World Settings. *International Journal of Human-Computer Studies* 145, 102508. 10 pages.
- [J11] Liu, R., Walker, E., Friedman, L., Arrington, C.M., **Solovey, E.T.** (2020). fNIRS-based Classification of Mind-wandering with Personalized Window Selection for Multimodal Learning Interfaces. *Journal on Multimodal User Interfaces*. 16 pages.
- [J10] Pahlavan, K., Ying, J., Li, Z., **Solovey, E.**, Loftus, J., Dong, Z. (2020). RF Cloud for Cyberspace Intelligence. *IEEE Access* 8: 89976-89987.
- [J9] Girouard, A., Shaer, O., **Solovey, E.T.**, Poor, M., Jacob, R.J.K. (2019). The Reality of Reality-Based Interaction: Understanding the Impact of a Framework as a Research Tool. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 26, 5, Article 35, 35 pages.
- [J8] Jacucci, G., Fairclough, S., & **Solovey, E. T.** (2015). Physiological Computing. *IEEE Computer*, 48(10), 12-16.
- [J7] Belyusar, D., Mehler, B., **Solovey, E.T.** & Reimer, B. (2015). The Impact of Repeated Exposure to a Multi-Level Working Memory Task on Physiological Arousal and Driving Performance. *Transportation Research Record: Journal of Transportation Research Board*. No. 2518, 46-53.
- [J6] Boyer, M., Cummings, M.L., Spence, L.B., **Solovey, E.T.** (2015). Investigating Mental Workload Changes in a Long Duration Supervisory Control Task. *Interacting With Computers*, 27(5), 512-520.
- [J5] **Solovey, E.T.**, Afergan, D., Peck, E.M., Hincks, S.W., Jacob, R.J.K. (2015). Designing Implicit Interfaces for Physiological Computing: Guidelines and Lessons Learned using fNIRS. *ACM Transactions on Computer-Human Interaction (TOCHI)*. 21(6), 35 pages.
- [J4] Gao, F., Cummings, M.L., **Solovey, E.T.** (2014). Modeling Teamwork in Supervisory Control of Multiple Robots. *IEEE Transactions on Human-Machine Systems*. 44(4), 441-453.

- [J3] Girouard, A., **Solovey, E.T.**, & Jacob, R.J.K. (2013). Designing a Passive Brain Computer Interface using Real Time Classification of Functional Near-Infrared Spectroscopy. *International Journal of Autonomous and Adaptive Communications Systems*, 6(1), 26-44.
- [J2] Peck, E. M., **Solovey, E.T.**, Chauncey, K., Sassaroli, A., Fantini, S., Girouard, A., Hirshfield, L.M., Jacob, R.J.K. (2010). Your Brain, Your Computer, and You. *IEEE Computer*, 43(12), 86-89.
- [J1] Sassaroli, A., Zheng, F., Hirshfield, L.M., Girouard, A., **Solovey, E.T.**, Jacob, R.J.K., & Fantini, S. (2008). Discrimination of Mental Workload Levels in Human Subjects with Functional Near-Infrared Spectroscopy. *Journal of Innovative Optical Health Sciences*, 1(2), 227-237.

Refereed Full Conference Papers

- [C33] Alkhudaidi, K., Burke, T., Boll, R., Mahajan, S., **Solovey, E.T.**, Reis, J. 2025. Perceptions and Preferences: Deaf ASL-Signing Users' Insights on Video Elements, Styles and Layouts. In *Proc. CHI Conference on Human Factors in Computing Systems (CHI '25)*, April 26–May 01, 2025, Yokohama, Japan. ACM, New York, NY, USA. 20 pages. [Acceptance Rate: 25%] (To Appear)
- [C32] Mahajan, S., Boll, R., Alkhudaidi, K., Reis, J., **Solovey, E.T.** Conducting HCI Research with the Deaf Community in American Sign Language: Practices and Experiences. In *Proc Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '25)*. April 26–May 01, 2025, Yokohama, Japan. ACM, New York, NY, USA, 8 pages. [Acceptance Rate: 30%].
- [C31] Boll, R., Mahajan, S., Burke, T., Alkhudaidi, K., Henriques, B., Cordova, I., Walker, Z., **Solovey, E.T.**, Reis, J. User Perceptions and Preferences for Online Surveys in American Sign Language: An Exploratory Study. In *Proc. of ACM SIGACCESS Conference on Computers and Accessibility. (ASSETS'23)*. Article 21, 1–17. [Acceptance Rate: 30%].
- [C30] Unal, D.S., Arrington, C.M., **Solovey, E.**, Walker, E. (2023). Eliciting Proactive and Reactive Control During Use of an Interactive Learning Environment. In: Wang, N., Rebolledo-Mendez, G., Matsuda, N., Santos, O.C., Dimitrova, V. (eds) *Artificial Intelligence in Education. AIED 2023. Lecture Notes in Computer Science*, vol 13916, 753-759. Springer.
- [C29] Chen, M. **Solovey, E.T.**, Smith, G. 2023. Impact of BCI-Informed Visual Effect Adaptation in a Walking Simulator. In *Proc. FDG'23*. ACM, New York, NY, USA, 12 pages.
- [C28] Howell-Munson, A., Micek, C. Li, Z., Clements, M., Nolan, A.C., Powell, J., **Solovey, E.T.**, Neamtu, R. 2022. BrainEx: Interactive Visual Exploration and Discovery of Sequence Similarity in Brain Signals. *Proc. ACM Hum.-Comput. Interact.* 6, EICS, Article 162 (June 2022), 41 pages.
- [C27] Howell-Munson, A., Doherty, E., Gavriel, P., Nicolas, C., Norton, A., Neamtu, R., Yanco, H., Wu, Y., **Solovey, E.T.** 2022. Towards Brain Metrics for Improving Multi-Agent Adaptive Human-Robot Collaboration: A Preliminary Study. In 2022 Symposium on Human-Computer Interaction for Work (CHIWORK 2022). Association for Computing Machinery, New York, NY, USA, Article 11, 1–10.
- [C26] Mahajan, S., Alkhudaidi, K., Boll, R., Reis, J. **Solovey, E.T.** 2022. Role of Technology in Increasing Representation of Deaf Individuals in Future STEM Workplaces. In 2022 Symposium on Human-Computer Interaction for Work (CHIWORK 2022). Association for Computing Machinery, New York, NY, USA, Article 16, 1–6.
- [C25] Mahajan, S., Walker, Z., Boll, R., Santacreu, M., Salvino, A., Westfort, M., Reis, J., **Solovey, E.T.** (2022). Towards Sign Language-Centric Design of ASL Survey Tools. In *CHI Conference on Human Factors in Computing Systems (CHI '22)*, April 29-May 5, 2022, New Orleans, LA, USA. ACM, New York, NY, USA, 16 pages. **Honorable Mention for Best Paper Award.** [Awarded to top 5%]
- [C24] McDonald, D.Q., Mahajan, S., Vallett, R., Dion, G., Shokoufandeh, A., **Solovey, E.T.** (2022). Interaction with Touch-Sensitive Knitted Fabrics: User Perceptions and Everyday Use Experiments. In *CHI Conference on Human Factors in Computing Systems (CHI '22)*, April 29-May 5, 2022, New Orleans, LA, USA. ACM, New York, NY, USA, 20 pages. [Acceptance Rate: 24.6%]

- [C23] De Carli, L., Ray, I., **Solovey, E.T.** (2021). Vision: Stewardship of Smart Devices Security for the Aging Population. In *Proc. ACM EuroUSEC '21: European Symposium on Usable Security*. 9 pages. **Honorable Mention for Best Paper Award**. [Top 2 papers]
- [C22] Unal, D., Arrington, K., **Solovey, E.**, Walker, E. (2020). Using Thinkalouds to Understand Rule Learning and Cognitive Control Mechanisms within an ITS. In *Proc. International Conference of Artificial Intelligence in Education (AIED)*. [Acceptance Rate: 26.6%]
- [C21] Li, Z., Lei, Z., Yan, A., **Solovey, E.**, Pahlavan K. (2020). ThuMouse: A Micro-gesture [Cursor Input through mmWave Radar-based Interaction. In *Proc. IEEE ICCE International Conference on Consumer Electronics*, Las Vegas, NV, USA
- [C20] **Solovey, E.T.**, Powale, P., Cummings, M.L. (2017). A Field Study of Multimodal Alerts for an Autonomous Threat Detection System. In *Proc. Human-Computer Interaction International Conference* (pp. 393-412). Springer.
- [C19] Chan, J., Siangliulue, P., McDonald, D.Q., Liu, R., Moradinezhad, R., Aman, S., **Solovey, E.T.**, Gajos K. & Dow, S.P. (2017). Semantically Far Inspirations Considered Harmful? Accounting for Cognitive States in Collaborative Ideation. In *Proc. of 2017 ACM Conference on Creativity and Cognition*. (pp. 93-105). ACM. [Acceptance Rate: 28.9%].
- [C18] Tucker, F., **Solovey, E. T.**, Geib, C., Lee, F. (2016). Veneer: A Digital Visual Novel Game Exploring Player Empathy. In *Proc. Meaningful Play*. East Lansing, MI.
- [C17] **Solovey, E.T.**, Okerlund, J., Hoef, C., Davis, J., Shaer, O. (2015). Augmenting Spatial Skills with Semi-Immersive Interactive Desktop Displays: Do Immersion Cues Matter? In *Proc. Augmented Human International Conference*. (pp. 53-60). ACM.
- [C16] **Solovey, E.T.**, Zec, M., Garcia Perez, E., Reimer, B., Mehler, B. (2014). Classifying Driver Workload Using Physiological and Driving Performance Data: Two Field Studies. In *Proc. ACM Conference on Human Factors in Computing Systems CHI '14*. (pp. 4057-4066). ACM. **Best Paper Award Honorable Mention**. [Awarded to top 5%]
- [C15] Afergan, D., Peck, E.M., **Solovey, E.T.**, Jenkins, A., Hincks, S.W., Brown, E.T., Chang, R., Jacob, R.J.K. (2014). Dynamic Difficulty Using Brain Metrics of Workload. In *Proc. ACM Conference on Human Factors in Computing Systems CHI '14*. (pp. 3797-3806). ACM. **Best Paper Award Honorable Mention**. [Awarded to top 5%]
- [C14] Berardi, C., **Solovey, E.T.**, Cummings, M.L. (2013). Investigating the Efficacy of Network Visualizations for Intelligence Tasks. In *Proc. of 2013 IEEE International Conference on Intelligence and Security Informatics (ISI)*, (pp. 278-283). IEEE.
- [C13] Mkrtychyan, A., Macbeth, J., **Solovey, E.T.**, Ryan, J., Cummings, M.L. (2012). Using Variable-Rate Alerting to Counter Boredom in Human Supervisory Control. In *Proc. Human Factors and Ergonomics Society Annual Meeting*, (Vol. 56, No. 1, pp. 1441-1445). Sage CA: Los Angeles, CA: Sage Publications.
- [C12] **Solovey, E.T.**, Schermerhorn, P., Scheutz, M., Sassaroli, A., Fantini, S., Jacob, R.J.K. (2012). Brainput: Enhancing Interactive Systems with Streaming fNIRS Brain Input. In *Proc. ACM Conference on Human Factors in Computing Systems CHI'12*. (pp. 2193-2202). ACM. **Best Paper Award Honorable Mention**. [Awarded to top 5%].
- [C11] **Solovey, E.T.**, Chauncey, K., Lalooses, F., Parasi, M., Weaver, D., Scheutz, M., Schermerhorn, P., Sassaroli, A., Fantini, S., Girouard, A., Jacob, R.J.K. (2011). Sensing Cognitive Multitasking for a Brain-Based Adaptive User Interface. *Proc. ACM Conference on Human Factors in Computing Systems CHI'11*, (pp. 383-392). ACM. [Acceptance Rate: 26%].
- [C10] **Solovey, E.T.**, Girouard, A., Chauncey, K., Hirshfield, L.M., Sassaroli, A., Zheng, F., Fantini, S., Jacob, R.J.K. (2009). Using fNIRS Brain Sensing in Realistic HCI Settings: Experiments and Guidelines. *ACM UIST 2009 Symposium on User Interface Software and Technology*, (pp. 157-166). ACM. [Acceptance Rate: 18%].
- [C9] **Solovey, E.T.** Using Your Brain for Human-Computer Interaction. (2009). Doctoral Consortium, *ACM UIST 2009 Symposium on User Interface Software and Technology*. ACM.
- [C8] Hirshfield, L.M., **Solovey, E.T.**, Girouard, A., Kebinger, J., Jacob, R.J.K., Sassaroli, A., Fantini, S. (2009). Brain Measurement for Usability Testing and Adaptive Interfaces: An Example of Uncovering Syntactic Workload with Functional Near Infrared Spectroscopy. *Proc. ACM Conference on Human Factors in Computing Systems CHI'09*. (pp. 2185-2194). ACM. [Acceptance Rate: 24.5%].

- [C7] Horn, M.S., **Solovey, E.T.**, Crouser, R.J., & Jacob, R.J.K. (2009). Comparing the Use of Tangible and Graphical Programming Languages for Informal Science Education. *Proc. ACM Conference on Human Factors in Computing Systems CHI'09*, (pp. 975-984). ACM. [Acceptance Rate: 24.5%].
- [C6] Girouard, A., **Solovey, E.T.**, Hirshfield, L.M., Chauncey, K., Sassaroli, A., Fantini, S., & Jacob, R.J.K. (2009). Distinguishing Difficulty Levels with Non-invasive Brain Activity Measurements. *Proc. INTERACT 2009 Conference*, (pp. 440-452). Springer. [Acceptance Rate 29%].
- [C5] Hirshfield, L.M., Chauncey, K., **Solovey, E.T.**, Girouard, A., Jacob, R., Sassaroli, A., & Fantini, S. (2009). Combining Electroencephalograph and Near Infrared Spectroscopy to Explore Users' Instantaneous and Continuous Mental Workload States. *HCI International 2009 13th International Conference on Human-Computer Interaction*, Springer.
- [C4] Sassaroli, A., Zheng, F., Coutts, M., Hirshfield, L.M., Girouard, A., **Solovey, E.T.**, Jacob, R.J.K., Tong, Y., Frederick, B. deB., Fantini, S. (2009). Application of Near-Infrared Spectroscopy for Discrimination of Mental Workloads, *SPIE Proceedings 7174*.
- [C3] Horn, M.S., **Solovey, E. T.**, Jacob, R.J.K. (2008). Tangible Programming and Informal Science Learning: Making TUIs Work for Museums. *Proc. of Interaction Design and Children*, (pp. 194-201). ACM.
- [C2] Jacob, R.J.K., Girouard, A., Hirshfield, L.M., Horn, M.S., Shaer, O., **Solovey, E.T.**, & Zigelbaum, J. (2008). Reality-Based Interaction: A Framework for Post-WIMP Interfaces. *Proc. ACM CHI 2008 Human Factors in Computing Systems Conference*, (pp. 201-210). ACM. [Acceptance Rate: 22%]
- [C1] Girouard, A., **Solovey, E.T.**, Hirshfield, L., Ecott, S., Shaer, O., & Jacob, R.J.K. Smart Blocks: A Tangible Mathematical Manipulative. *Proc. TEI 2007 First International Conference on Tangible and Embedded Interaction*, (pp. 183-186). ACM.

PhD Dissertation

- [D1] **Solovey, E.T.** (2012). Real-time fNIRS Brain Input for Enhancing Interactive Systems. Ph.D. Dissertation, Computer Science Department, Tufts University, Medford, MA.

Book Chapters

- [B2] Gao, F., Cummings, M.L., **Solovey, E.T.** (2016). Designing for Robust and Effective Teamwork in Human-Agent Teams. in *The Intersection of Robust Intelligence (RI) and Trust in Autonomous Systems*, Ed.: W. Lawless, (pp. 167-190). Springer US.
- [B1] Girouard, A., **Solovey, E.T.**, Hirshfield, L., Peck, E., Chauncey, K., Sassaroli, A., Fantini, S., & Jacob, R.J.K. (2010). From Brain Signals to Adaptive Interfaces: Using fNIRS in HCI. in *Brain-Computer Interfaces: Applying our Minds to Human-Computer Interaction*, ed. by A. Nijholt, pp. 221-237, Springer.

Poster Presentations (Peer Reviewed)

- [P17] Chen, K., Taylor, D., **Solovey, E.T.** (2024). Research Experiences for Teachers (RET) Site at WPI: Engineering for People and the Planet as Inspiration to Teach Integrated STEM. Proceedings of the American Society for Engineering Education (ASEE'24).
- [P16] Sonmez Unal, D., Mowad, T. G, Howell-Munson, A., Walker, E., **Solovey, E.**, & Arrington, C. (2023). Classification of Rule Learning Phases in Inductive Reasoning. Proceedings of the Annual Meeting of the Cognitive Science Society.
- [P15] Howell-Munson, A., Unal, D.S., Mowad, T., Arrington, C., Walker, E., **Solovey, E.** (2023). Classification of Brain Signals Collected During a Rule Learning Paradigm. In: Wang, N., Rebolledo-Mendez, G., Dimitrova, V., Matsuda, N., Santos, O.C. (eds) *Artificial Intelligence in Education. Posters and Late Breaking Results, Workshops and Tutorials, Industry and Innovation Tracks, Practitioners, Doctoral Consortium and Blue Sky. AIED 2023*. Communications in Computer and Information Science, vol 1831. Springer, Cham.
- [P14] Sonmez Unal, D., Arrington, C., **Solovey, E.**, & Walker, E. (2022). Eliciting Proactive and Reactive Control during Use of an Interactive Learning Environment. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 44.

- [P13] Boll, R., Mahajan, Reis, J., **Solovey, E.T.** (2020). Creating questionnaires that align with ASL linguistic principles and cultural practices within the Deaf community. In *Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility*. ACM.
- [P12] Keating, S., Walker, E., Motupali, A., **Solovey, E.T.** (2016). Toward Real-time Brain Sensing for Learning Assessment: Building a Rich Dataset. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (pp. 1698-1705). ACM.
- [P11] Reis, J., **Solovey, E.T.**, Henner, J., Johnson, K., Hoffmeister, R. (2015). ASL CLear: STEM Education Tools for Deaf Students. In *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility* (pp. 441-442). ACM.
- [P10] Belyusar, D., Reimer, B., Mehler, B., Afergan, D., Coughlin, J.F., **Solovey, E.T.** (2014). Utilizing functional near-infrared spectroscopy to identify cognitive processes contributing to workload in a dual-task environment. *Society for Neuroscience Annual Meeting*, Washington, D.C.
- [P9] Hoef, C., Davis, J., Shaer, O., **Solovey, E.T.** (2014). An In-Depth Look at the Benefits of Immersion Cues on Spatial 3D Problem Solving. In *Proc. ACM Symposium on Spatial User Interfaces*, (pp. 157-157). ACM.
- [P8] **Solovey, E.T.**, Mehler, B., Reimer, B. (2012). Brain Sensing with fNIRS in the Car. In *Adjunct Proc. of International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutoUI)*, Portsmouth, NH.
- [P7] **Solovey, E.T.**, Jackson, K., Cummings, M.L. (2012). Collision Avoidance Interface for Safe Piloting of Unmanned Vehicles using a Mobile Device. In *Adjunct Proc. ACM UIST 2012 Symposium on User Interface Software and Technology*, (pp. 77-78). ACM.
- [P6] Peck, E., **Solovey, E.T.**, Su, S., Jacob, R.J.K., & Chang, R. (2011). Near to the brain: Functional near-infrared spectroscopy as a lightweight brain imaging technique for visualization, *Proc. IEEE Conference on Information Visualization*. **Best Poster Award**
- [P5] **Solovey, E.T.**, Jacob, R.J.K. (2010). Using fNIRS to Support User Interfaces. In *Proc. fNIRS Conference*, Cambridge, MA.
- [P4] Sassaroli, A., Zheng, F., Girouard, A., **Solovey, E.T.**, Chauncey, K., Hirshfield, L.M., Peck, E., Jacob, R.J.K., & Fantini, S. (2010). Application of correlation analysis tools for the classification of mental workloads in functional near-infrared spectroscopy. In *Proc. BIOMED OSA Topical Meeting*.
- [P3] Sassaroli, A., Tong, Y., Hirshfield, L.M., Girouard, A., **Solovey, E.T.**, Jacob, R.J.K., & Fantini, S. (2008). Real-time assessment of mental workload with near infrared spectroscopy: potential for human-computer interaction. In *Proc. BIOMED, OSA topical meeting*, St. Petersburg Bayfront, FL.
- [P2] Hirshfield, L.M., Girouard, A., **Solovey, E.T.**, Jacob, R.J.K., Sassaroli, A., Tong, Y., & Fantini, S. (2007). Human-Computer Interaction and Brain Measurement Using Functional Near-Infrared Spectroscopy. In *Adjunct Proc. ACM UIST 2007 Symposium on User Interface Software and Technology*, ACM.
- [P1] Jacob, R.J.K., Girouard, A., Hirshfield, L.M., Horn, M.S., Shaer, O., **Solovey, E.T.**, & Zigelbaum, J. (2007). Reality-Based Interaction: Unifying the New Generation of Interaction Styles. In *ACM CHI 2007 Human Factors in Computing Systems Conference Extended Abstracts*, pp. 2465-2470, ACM.

Workshop Papers (Peer Reviewed)

- [W28] Mitrevska, T., Tag, B., Monica Perusquia-Hernandez, M., Niijima, A., Sidenmark, L., **Solovey, E.**, Ali, A., Mayer, S., Chiossi, F. 2025. SIG PhysioCHI: Human-Centered Physiological Computing in Practice. In *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '25)*, April 26–May 01, 2025, Yokohama, Japan. ACM, New York, NY, USA, 5 pages.
- [W27] Micek, C., **Solovey, E.T.**, Rodrigues, L., Eilks, A., Warnke, L., Putze, F. (2024). Team Cognitive Informatics: Leveraging Brain Sensing to Assess and Augment Team Performance in Creative Collaboration. *ACM CHI'24 Workshop on the Future of Cognitive Personal Informatics*. 6 pages.

- [W26] Micek, C., **Solovey, E.T.** (2024). Physiological Signals for Teamwork: User-Centered Design of a Brain-Computer Interface to Enhance Creative Collaboration. ACM CHI'24 Workshop on PhysioCHI: Towards Best Practices for Integrating Physiological Signals in HCI. 12 pages.
- [W25] Mahajan, S., McDonald, D.Q., Vallett, R.J., Liu, F., Smith, G., **Solovey, E.T.** (2022). Concept Design for Family Well-being with Knitted Touch Sensors and Augmented Reality. ACM CHI'22 Workshop on Tangible Interaction for Wellbeing. 6 pages.
- [W24] Mahajan, S., McDonald, D.Q., Vallett, R.J., Liu, F., **Solovey, E.T.** (2022). Exploring Use of AR and Soft Knitted Sensor Technology for Co-located Parent-Child Quality Time. ACM GROUP'22 Workshop on Technologies for Children at Home Exploring Ways To Support Caregivers With Child-friendly Media Technologies For The Home. 5 pages.
- [W23] Howell-Munson, A., Unal, D.S., Walker, E., Arrington, C. **Solovey, E.T.** (2021) Preliminary steps towards detection of proactive and reactive control states during learning with fNIRS brain signals. *Proc. 1st International Workshop on Multimodal Artificial Intelligence in Education (MAIED'21)*. 10 pages.
- [W22] Micek, C., Guan, Z., **Solovey, E.T.** (2021). Toward Understanding Effects of Digital Jury Moderation on the Polarization of Social Media Users. In *Proc. CHI 2021 Workshop in Search of the Alternative Future: Developing Participatory Digital Citizenship to Address the Crisis of Democracy*. 5 pages.
- [W21] De Carli, L., Ray, I., **Solovey E.T.** (2020). Enabling IoT Residential Security Stewardship for the Aging Population. In *Proc. CHI 2020 Workshop on Designing Interactions for the Ageing Populations - Addressing Global Challenges*. 5 pages.
- [W20] Moradinezhad, R., **Solovey, E.** (2020). Embodied Conversational Agent Behavior and its Impact on Trust in Other Agents. *Proc. of CUI@CHI: Mapping Grand Challenges for the Conversational User Interface Community CHI 2020 Workshop*. 6 pages.
- [W19] Liu, R., **Solovey, E.T.** (2020). AI for Adaptive Brain-Computer Interfaces: Challenges and Opportunities. *Proc. Of CHI 2020 Workshop on Artificial Intelligence for HCI: A Modern Approach*. 4 pages.
- [W18] Liu, R., Sarkar, A., **Solovey, E.T.**, Tschitschek, S. (2019). Evaluating Rule-based Programming and Reinforcement Learning for Personalising an Intelligent System. In *Proc. of the 2019 on IUI Workshop on Explainable Smart Systems*. 11 pages.
- [W17] Friedman, L., Liu, R. Walker, E., **Solovey, E.T.** (2018). Integrating Non-Invasive Neuroimaging and Computer Log Data to Improve Understanding of Cognitive Processes. In *Proceedings of ACM International Conference on Multimodal Interaction Workshop on Modeling Cognitive Processes from Multimodal Data*, October 2018. Article No: 10, pp1-5. ACM Press.
- [W16] Putze, F., Hild, J., Kasneci, E., Sano, A., **Solovey, E. T.**, Schultz, T. (2018). Modeling Cognitive Processes from Multimodal Data (Workshop Summary). In *Proceedings of ACM International Conference on Multimodal Interaction*, ACM Press. 1 page.
- [W15] Girouard, A., Jacob, R.J.K., Shaer, O., **Solovey, E. T.**, Poor, M. (2018). Reflecting on the Impact of HCI Frameworks, *Proc. ACM CHI 2018 Workshop on Rethinking Interaction*, ACM Press. 5 pages.
- [W14] Moradinezhad, R., **Solovey, E.T.** (2018) Studying the Effects of Interacting with Virtual Agents in Amplifying Human Senses. In *Proceedings of ACM CHI 2017 Workshop on Amplification and Augmentation of Human Perception*. 4 pages.
- [W13] McDonald, D. Q., Greenstadt, R., Kaimal, G., **Solovey, E.T.**. Mental Health Markers in Language and Brain Data: Potential Diagnostic Use and Privacy Concerns. In *Proc. of ACM CHI 2017 Symposium on Computing and Mental Health*. 2017. 8 pages.
- [W12] Liu, R., Marcu, G., **Solovey, E.T.** Mindful Shopping: A Compulsive Buying Disorder Management Tool. In *Proceedings of ACM CHI 2017 Workshop on Interactive Systems in Healthcare (WISH 2017)*. 6 pages.
- [W11] McDonald, D.Q., **Solovey, E.T.** AgileFood: Facilitating Adaptive Food Donation to Address Hunger & Reduce Waste. In *Proceedings of ACM CHI 2017 Workshop on Designing Sustainable Food Systems*. 3 pages.

- [W10] **Solovey, E.T.**, Liu, R., Moradinezhad, R.. Advanced Interaction Research in Autonomous Vehicles. *Proc CHI 2016 Workshop on HCI and Autonomous Vehicles: Contextual Experience Informs Design*. 2016. 3 pages.
- [W9] **Solovey, E.T.**, Afergan, D, Venkat, A., Belyusar, D., Mehler, B., Reimer, B. Enabling Adaptive Autonomy: Brain & Body Sensing for Adaptive Vehicles. *Proc. CHI 2015 Workshop on Autonomous Driving UX*. (2015). 5 pages.
- [W8] Reinecke, K., Flatla, D., **Solovey, E.T.**, Gutwin, C., Gajos, K., Heer, J. Many People, Many Eyes: Aggregating Influences of Visual Perception on User Interface Design. Workshop at CHI'13. In *ACM Human Factors in Computing Systems (CHI) Extended Abstracts* (2013). 4 pages.
- [W7]. **Solovey, E.T.** Real-time fNIRS Brain Input for Adaptive Robot Autonomy, *HRI Pioneers Workshop* (2012). [Acceptance Rate: 22%].
- [W6] **Solovey, E.T.**, Jacob, R.J.K. Meaningful Human-Computer Interaction Using fNIRS Brain Sensing. *Proc. CHI 2011 Workshop on Brain and Body Interfaces: Designing for Meaningful Interaction* (2011). 4 pages.
- [W5] Girouard, A., **Solovey, E.T.**, Mandryk, R., Tan, D., Nacke, L., Jacob, R.J.K. Brain, Body, and Bytes: Psychophysiological User Interaction. Workshop held at CHI'10. In *ACM Human Factors in Computing Systems (CHI) Extended Abstracts* (2010). 4 pages.
- [W4] **Solovey, E.T.**, Shaer, O., Girouard, A., Hirshfield, L.M., Horn, M.S., Zigelbaum, J., Jacob, R.J.K. Programming reality within the reality-based interaction framework. *Proc. ACM CHI 2009 Workshop on Programming Reality* (2009). 4 pages.
- [W3] Hirshfield, L.M., **Solovey, E.T.**, Girouard, A., Jacob, R.J.K., Kebinger, J., Horn, M.S., Shaer, O., Zigelbaum, J., Jacob, R.J.K.. Using Brain Measurement to Evaluate Reality Based Interactions. *Proc. ACM CHI 2009 Workshop on Challenges in Evaluating Usability and User Experience of Reality-Based Interaction* (2009). 4 pages.
- [W2] Girouard, A., Hirshfield, L.M., **Solovey, E.T.**, Jacob., R.J.K. Using functional Near-Infrared Spectroscopy in HCI: Toward evaluation methods and adaptive interfaces. *Proc. ACM CHI 2008 Workshop on Brain-Computer Interfaces for HCI and Games* (2008). 4 pages.
- [W1] Horn, M.S., Shaer, O., Girouard, A., Hirshfield, L.M., **Solovey, E.T.**, Zigelbaum, J., Jacob, R.J.K. Putting Tangible User Interfaces in Context: A Unifying Framework for Next Generation HCI. *Proc. ACM CHI 2007 Workshop on Tangible User Interfaces in Context and Theory* (2007). 4 pages.

Video (Peer Reviewed)

- [V1] Bernstein, M., André, P., Luther, K., **Solovey, E.T.**, Poole, E.S., Paul, S.A., Kane, S.K., Grudin, J. (2009). CHIStory. CHI 2009 Video Showcase. In *CHI'09 Extended Abstracts on Human Factors in Computing Systems* (pp. 3493-3494). ACM. **Golden Mouse Award**.

Academic Magazine Articles

- [M4] Peck, E., & **Solovey, E.T.** Neuroscience and computing. (2011). *ACM XRDS: Crossroads Magazine*, 18(1), 5-5.
- [M3] Peck, E., & **Solovey, E. T.** (2011) The sensorium. *ACM XRDS: Crossroads Magazine* 18(1), 14-17.
- [M2] Peck, E., Chauncey, K., Girouard, A., Gulotta, R., Lalooses, F., **Solovey, E.T.**, Weaver, D., & Jacob, R.J.K. (2010). From Brains to Bytes. *ACM XRDS: Crossroads*, 16(4), 42-47.
- [M1] Jacob, R.J.K., Girouard, A., Hirshfield, L.M., Horn, M., Shaer, O., **Solovey, E.T.**, & Zigelbaum, J. (2007). What Is the Next Generation of Human-Computer Interaction? *Interactions*, 14(3), 53-58.

Other Papers

- [O9] Dubey, J., Sumaria, M., Oktay, E., Li, Y., Li, Z., Neamtu, R., **Solovey, E.T.** (2019). Towards neuroadaptive technology using time warped distances for similarity exploration of brain data. In *Proc. of Neuroadaptive Technology Conference* (NAT 2019), Liverpool UK.
- [O8] Friedman, L., Liu, R., Kim, A., Walker, E., **Solovey, E.T.** (2018). Towards Neuroadaptive Personal Learning Environments: Using fNIRS to Detect Changes in Attentional State, *Proc. 2nd International Conference on Neuroergonomics*, Frontiers.

- [O7] Moradinezhad, R., **Solovey, E.T.** (2018). Assessing human reaction to a virtual agent's facial feedback in a simple Q&A setting, *Proc. 2nd International Conference on Neuroergonomics*, Frontiers.
- [O6] McDonald, D. Q., **Solovey, E.T.** (2017). User Identification from fNIRS Brain Data Using Deep Learning. In *Proc. Neuroadaptive Technology Conference*, Berlin, Germany.
- [O5] Liu, R., Walker, E., **Solovey, E.T.** (2017). Toward Neuroadaptive Personal Learning Environments. In *Proc. Neuroadaptive Technology Conference*, Berlin, Germany.
- [O4] Afergan, D., **Solovey, E.T.**, Peck, E.M., Jenkins, A.J., Chang, R., Jacob, R.J.K. (2013). Dynamic Difficulty Using Brain Metrics of Workload for UAV Operators, Student Research Conference. Human Factors and Ergonomics Society New England Chapter, Cambridge, MA.
- [O3] Teller, S., Horn, B.K., Finman, R., Wu, B., **Solovey, E.T.**, Wang, B., Karraker, J. (2012). Divert and Alert: Mitigating and Warning of Traffic Threats to Police Stopped Along the Roadside, *National Institute of Justice Conference*. Arlington, VA.
- [O2] **Solovey, E.T.** (2008). Using your brain for human-computer interaction, Grace Hopper Celebration of Women in Computing. Poster Session.
- [O1] Girouard, A., **Solovey, E.T.**, Hirshfield, L.M., Chauncey, K., Sassaroli, A., Fantini, S., & Jacob, R.J.K. (2008). Distinguishing Difficulty Levels with Non-invasive Brain Activity Measurements, Technical Report 2008-3, Department of Computer Science, Tufts University, Medford, Mass.

AWARDS AND RECOGNITIONS

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- | | |
|---|-------------|
| • Best Paper Award Honorable Mention, ACM Conference on Human Factors in Computing Systems [Top 5% of submitted papers]. “Towards Sign Language-Centric Design of ASL Survey Tools.” [C26]. | 2022 |
| • Best Paper Award Honorable Mention, European Symposium on Usable Security “Vision: Stewardship of Smart Devices Security for the Aging Population” [C24]. | 2021 |
| • Nominated for Best Paper Award Track, IEEE Conference on Consumer Electronics “ThuMouse: A Micro-gesture Cursor Input through mmWave Radar-based Interaction” [C21]. | 2020 |
| • Special Recognition for Reviewing, ACM CHI Conference | 2017 |
| • Special Recognition for Reviewing, ACM UIST Conference | 2016 |
| • Best Paper Award Honorable Mention, ACM Conference on Human Factors in Computing Systems [Top 5% of submitted papers]. “Classifying Driver Workload Using Physiological and Driving Performance Data: Two Field Studies.” [C16]. | 2014 |
| • Best Paper Award Honorable Mention, ACM Conference on Human Factors in Computing Systems [Top 5% of submitted papers]. “Dynamic Difficulty Using Brain Metrics of Workload.” [C15]. | 2014 |
| • Special Recognition for Reviewing, ACM Conference on Designing Interactive Systems (DIS) | 2014 |
| • Best Paper Award Honorable Mention, ACM Conference on Human Factors in Computing Systems [Top 5% of submitted papers]. “Brainput: Enhancing Interactive Systems with Streaming fNIRS Brain Input.” [C12]. | 2012 |
| • IEEE/ACM Human-Robot Interaction Pioneer [Acceptance Rate: 22%]. “Real-time fNIRS Brain Input for Adaptive Robot Autonomy.” [W7]. | 2012 |
| • Best Poster Award at 2011 IEEE Conference on Information Visualization. “Near to the brain: Functional near-infrared spectroscopy as a lightweight brain imaging technique for visualization.” [P6]. | 2011 |
| • Golden Mouse Award, ACM CHI Video Showcase. “CHIstory.” [V1]. | 2009 |

PROFESSIONAL PRESENTATIONS AND PANELS

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- [PP50] “Thinking with AI: The Role of Brain Sensing in Human-AI Interaction”, Yale University / Wu Tsai Institute: fNIRS Workshop. New Haven, CT. November 9, 2024.

- [PP49] “Thinking with AI: The Role of Brain Sensing in Human-AI Interaction”, Harvard University. Cambridge, MA. November 6, 2024.
- [PP48] Panel Moderator, AI & Healthcare, Women in Data Science Conference. Worcester, MA. March 13, 2024.
- [PP47] Keynote, Neureality Hackathon on Neurotech and Virtual Reality. New York, NY. March 8, 2024.
- [PP46] “Human-AI Collaboration in Complex Environments: Advancing Interaction Modalities”, Dagstuhl Seminar on Human-AI Interaction for Work. November, 6, 2023.
- [PP45] Direct Brain Interface and Accessibility Panel, Future of Interface Workshop. February 16, 2023.
- [PP44] “Integrating brain signals and educational data mining to improve online learning environments,” Joint meeting of Neuroergonomics Conference and NYC Neuromodulation Conference. New York, NY. July 31, 2022.
- [PP43] “Recruitment Process for Academic Hiring,” NSF-funded Computing Innovation Fellows Cohort Building Event Panelist. Virtual. October 29, 2021.
- [PP42] “My Experience Building a Research Program,” WPI New Faculty Orientation Panel Talk. WPI. August 19, 2021.
- [PP41] “Decoding Brain and Biosensor Stress Signals for Human-Centered Technology,” Ask Me Anything Panel on Stress, WPI. Virtual. January 14, 2021.
- [PP40] “Integrating Brain Signals and Educational Data Mining to Improve Understanding of Robust Learning Processes,” HCI and the future of work and well-being: A series of conversations. Virtual. November 12, 2020.
- [PP39] “Decoding Brain and Biosensor Signals for Human-Computer Interaction,” Technical talk, Women in Data Science Central Massachusetts Conference. Worcester, MA, USA. March 2, 2020.
- [PP38] “Human-Machine Interaction,” George Mason University. Fairfax, VA. December 5, 2019.
- [PP37] Lightning Talk, WPI Women’s Impact Network Tea Party, Worcester, MA. November 14, 2019.
- [PP36] “Human-Computer Interaction & Neuroadaptive Technology,” **Keynote Talk**, Neuroadaptive Technology Conference. Liverpool, UK. July 17, 2019.
- [PP35]. “Towards neuroadaptive technology using time warped distances for similarity exploration of brain data,” Neuroadaptive Technology Conference. Liverpool, UK. July 17, 2019.
- [PP34] “Enhancing Human-Computer Interaction with Real-time Brain Input,” UMass Interdisciplinary Neuroscience Conference. Amherst, MA. May 28, 2019.
- [PP33] “Data-Intensive Neuroscience and Cognitive Science”. NSF Workshop on Integrative Understanding of Neural and Cognitive Systems (NCS). (NSF PI Meeting)
- [PP32] “Careers in Academia,” Scientista Symposium, Boston, MA, March 31, 2019
- [PP31] “Enhancing Human-Computer Interaction with Real-time Brain Input,” WPI Neuroscience Seminar Series, Worcester, MA, January 30, 2019.
- [PP30] “Enhancing Interactive Systems with Real-time Brain Input,” Microsoft Technical Leadership Advisory Board Meeting on Brain-Computer Interfaces, Redmond, WA, August 16, 2018.
- [PP29] “Enhancing Human Collaboration with Artificial Intelligence Systems Through Brain-Computer Interfaces,” Hamlyn Symposium Workshop: Brain-Robot Interactions in Healthcare, London, England, June 23, 2017.
- [PP28] “Enhancing Human-Machine Systems with Real-time Brain Input.” United Technology Research Center, East Hartford, CT. August 11, 2016.
- [PP27] “Enhancing Interactive Systems with Real-time Brain Input.” Workshop on Collaborative Sensing, Learning, and Control in Human-Machine Systems at the American Control Conference, July 5, 2016.
- [PP26] “Exploring Reality-Based Interaction and Brain-Computer Interfaces,” Natural User Interface Central, New York, NY, July 20, 2015.

- [PP25] "Design of Interactive Systems Utilizing Real-Time Brain & Body Input," Hamlyn Symposium Workshop: Brain-Robot Interactions in Healthcare, London, England, June 23, 2015.
- [PP24] Microsoft Faculty Summit, Redmond, WA, July 14-15, 2014.
- [PP23] "Enhancing Interactive Systems with Real-time Brain & Body Input," Drexel RETHink Summer Institute in Computer Science for STEM High School and 2-Year College Faculty, College of Computing and Informatics, Drexel University, Philadelphia, PA. July 9, 2014.
- [PP22] "Using Your Brain for Human-Computer Interaction," Computing Faculty Seminar Series, College of Computing and Informatics, Drexel University, Philadelphia, PA. January 27, 2014.
- [PP21] "Enhancing Interactive Systems with Real-time Brain and Body Input," Biomed Seminar, Drexel University School of Biomedical Engineering, Science and Health Systems, Philadelphia, PA. January 10, 2014.
- [PP20] "Enhancing Interactive Systems with Real-time Brain Input," University of Toronto Human Factors Interest Group, Toronto, ON, Canada. December 6, 2013.
- [PP19] Guest Lecture, CS320: Tangible User Interfaces. Wellesley College, Wellesley, MA. October 28, 2013.
- [PP18] Guest Lecture, 6.835 – Intelligent Multimodal User Interfaces, MIT Department of Electrical Engineering and Computer Science (Course 6), Cambridge, MA. April 25, 2013.
- [PP17] "Ph.D. Job Search," CRA-W Graduate Cohort Workshop, Boston, MA. April 6, 2013.
- [PP16] "Ph.D. Academic Career Paths," CRA-W Graduate Cohort Workshop, Boston, MA. April 5, 2013.
- [PP15] "Can Computers Read Our Minds? Real-Time Brain Input for Interactive Systems," Boston Chapter of the Society on Social Implications of Technology, Cambridge, MA. March 4, 2013.
- [PP14] Brown Bag Lunch, Volpe National Transportation Systems Center, Cambridge, MA. December 20, 2012.
- [PP13] "Non-invasively Detecting Cognitive State with fNIRS to Support Human Supervisory Control," A Day of Autonomy Workshop, hosted by MIT and Lincoln Laboratory, Cambridge, MA. December 17, 2012.
- [PP12] Speaker Series, Personal Robotics Group, MIT Media Laboratory, Cambridge, MA. December, 2012.
- [PP11] "Next Generation Human-Machine Interaction," Human Machine Interaction Workshop, United Technology Research Center, East Hartford, CT. June 1, 2012.
- [PP10] Boston CHI: Boston Area chapter of ACM's Special Interest Group on Computer-Human Interaction, Cambridge, MA. March 13, 2012.
- [PP9] Guest Lecture, 6.835 – Intelligent Multimodal User Interfaces, MIT Department of Electrical Engineering and Computer Science (Course 6), Cambridge, MA. April 12, 2011.
- [PP8] "Non-invasively Detecting Cognitive State with fNIRS to Support User Interfaces," Humans & Automations Laboratory, MIT Department of Aeronautics and Astronautics, Cambridge, MA. July, 2010.
- [PP7] "Tangible Programming at the Museum of Science and Brain-Computer Interfaces," Guest Lecture, CS349 – Tangible User Interfaces, Wellesley College, Wellesley, MA. December 4, 2009.
- [PP6] "Programming with the Brain," When Everything is Programmable Conference, Institute for the Future, Palo Alto, CA. October 2009.
- [PP5] "Using your brain for HCI," Guest Lecture, MAS 672 - New Paradigms for Human-Computer Interaction, MIT Media Lab, Cambridge, MA. March 2009.
- [PP4] "Sensing Auditory Attention," HCI Intern Lunch Talks series, Microsoft Research, Redmond, WA. August, 2008.
- [PP3] "Introduction to SCORM," Education Development Center, Newton, MA. October 9, 2007.
- [PP2]"A window into the brain: new techniques for brain-computer interaction," Graduate Research Symposium Talk, Tufts University, April 13, 2007.

[PP1] “Finding the Needle in Haystack (HAX), Federated Search using the NCES Framework.” E. Treacy, M. Beynon, G. Mezynski. Presented at MIT Lincoln Laboratory. August 8, 2006.

COMMUNITY AND PROFESSIONAL ACTIVITIES

Advisory Board or Panel

- National Academy of Science Panel on Assessment of Humans in Complex Systems, 2022.
- Microsoft Technical Leadership Advisory Board on Brain-Computer Interfaces, 2018.

Grant Proposal Review Panels

- NSF Panel Member or Adhoc Reviewer, 2014, 2016, 2017, 2020, 2021, 2022, 2023, 2024
- NASA Panel Member, 2014, 2016
- W.M. Keck Foundation 2014

Deputy Editor

- *International Journal of Human-Computer Studies* (IJHCS) 2019-2024

Technical Program Chair / Organizing Committee

- Symposium on Human-Computer Interaction and the Future of Work (CHI WORK) 2025
- Understanding People Subcommittee, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) 2025
- Student Consortium, Annual Meeting of Symposium on Human-Computer Interaction and the Future of Work (CHI WORK) 2024
- Symposium on Human-Computer Interaction and the Future of Work (CHI WORK) 2022-2023.

Editorial Board

- *ACM Transactions on Computer-Human Interaction (TOCHI)* 2021-present
- *International Journal of Wireless Information Networks (IJWIN)* 2021-2023
- *International Journal of Human-Computer Studies (IJHCS)* 2014-2019
- Invited guest editor for *Frontiers in Bioengineering and Biotechnology* Special Issue on Biomedical Signals for Human-Computer Interaction 2019-2021
- Invited guest editor for *IEEE Computer* Special Issue on Physiological Computing 2015
- Invited guest editor for *ACM XRDS Magazine* Issue on Brain-Computer Interfaces and Neuroscience 2011

Program Committee

- ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) 2013, 2014, 2016, 2017, 2020, 2021, 2024
- Symposium on Human-Computer Interaction for Work Annual Meeting (CHIWORK) 2022, 2023
- ACM IUI workshop on Human-AI Co-Creation with Generative Models, 2025.
- Neuroadaptive Technology (NAT) Conference 2017, 2019
- ACM SIGCHI Conference on Tangible, Embedded, Embodied Interaction (TEI) 2012, 2013, 2014, 2015
- Neuroergonomics Conference 2018, 2020
- ACM SIGCHI Conference on Engineering Interactive Computing Systems (EICS), 2017
- ACM Creativity and Cognition 2017
- CHIIR Workshop on Challenges in Bringing Neuroscience to Research in Human-Information Interaction 2017
- Liaison Chair, Symbiotic Interaction Workshop 2017
- Workshops Committee, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) 2015
- ACM SIGIR Workshop on Neuro-Physiological Research in IR 2015
- International Workshop on Affective Brain Computer Interfaces (ABCI) 2015
- International Workshop on Symbiotic Interaction 2014, 2015

- ACM SIGCHI Conference on Human Factors in Computing Systems Work-in-Progress (CHI WiP) 2012

Workshop Organization

- SIG PhysioCHI: Human-Centered Physiological Computing in Practice at ACM Conference on Human Factors in Computing Systems (CHI'25). April 2025.
- Managing Booming Enrollments without Damaging Diversity Efforts, Working Group Leader at CRA LEVEL UP Boston Workshop, November 2023
- Modeling Cognitive Processes from Multimodal Data, at ACM International Conference on Multimodal Interfaces (ICMI), October, 2018
- Many People, Many Eyes: Aggregating Influences of Visual Perception on User Interface Design, at ACM Conference on Human Factors in Computing Systems (CHI), April, 2013.
- Brain, Body, and Bytes: Psychophysiological User Interaction, at ACM Conference on Human Factors in Computing Systems (CHI), April 2010.

Journal and Conference Reviewer

- ACM Conference on Human Factors in Computer Systems (CHI) 2007, 2008, 2009, 2010, 2011, 2012, 2015, 2017, 2019, 2023
- ACM Symposium on User Interface Software and Technology (UIST) 2009, 2010, 2011, 2012, 2014, 2015, 2016, 2019, 2020,2021,2023
- ACM Conference on Tangible and Embedded Interaction (TEI) 2007, 2008, 2012, 2013, 2014, 2017
- Privacy Enhancing Technologies Symposium (PETs) 2017
- ACM Conference on Designing Interactive Systems (DIS) 2014
- ACM Conference on Computer Supported Cooperative Work (CSCW) 2011, 2018
- ACM Conference on Ubiquitous Computing (Ubicomp) 2011, 2012, 2014
- ACM Conference on Engineering Interactive Computing Systems (EICS) 2013
- ACM Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI) 2013
- *IEEE Transactions on Affective Computing* 2014
- *IEEE Transactions on Human-Machine Systems* Journal 2013
- *International Journal of Human Computer Studies* 2013
- International Conference on Multimodal Interaction 2013
- *ACM Computing Surveys* 2012
- *Interacting with Computers* Journal 2012
- *ACM Transactions on Computer-Human Interaction* Journal (TOCHI) 2008, 2015, 2017
- Brain-Computer Interfacing Special Session at Conference on Multimodal Interaction (ICMI) 2011
- ACM International Conference on Advances in Computer Entertainment Technology (ACE) 2010
- *Ergonomics* 2011
- *Human Computer Interaction* 2014
- *International Journal of Neural Systems* 2016
- *Multimedia Tools and Applications* Journal 2017
- *Frontiers in Human Neuroscience* 2018

University Service

- WPI Committee on Tenure and Academic Freedom, 2023-2025
- WPI Neuroscience Task Force / Steering Committee, 2018-present
- WPI Neuroscience Master's program grad committee, 2020-2024
- WPI MS in Artificial Intelligence Faculty Advisory Committee, 2023-present
- WPI New Faculty Mentoring Program Mentor, 2021-2024

- WPI Computer Science Diversity, Equity and Inclusion Committee, 2022-2024
- WPI Computer Science Activity Model Task Force, 2022-2023
- WPI Computer Science Broadening Participation in Computing Department Plan Task Force, 2022-2023.
- WPI Computer Science Graduate Council, 2019-2022
- WPI Computer Science BS/MS Degree Coordinator, 2021-2022
- WPI Computer Science Faculty Search Committee, 2019-2020
- WPI Neuroscience Faculty Search Committee, 2018-2019
- Drexel University Computer Science Undergraduate Curriculum Committee, 2013-2018
- Drexel University CCI Distinguished Talks Committee, 2017
- Drexel University CCI Women in Computing Initiative, 2017-2018
- Drexel University CCI Budget & Strategic Planning Committee, 2015-2016
- Drexel University CCI Ad-hoc Curriculum Committee on Human-Centered Computing, 2015-2016.
- Faculty Advisor, NSF-Sponsored Research Experiences for Teachers in Engineering and Computer Science Site for Big Data, Machine Learning and CS Principles, Summer 2015
- Faculty Mentor, Drexel Students Tackling Advanced Research (STAR) Scholar Program, 2014, 2015, 2016.
- Undergraduate Research Poster Evaluator, Drexel STAR Scholar Summer Showcase, 2016
- Presidential Council on Family and Work, MIT, 2012-2013
- Graduate Leader, NSF-sponsored Computer Science, Engineering, and Math Scholar Program (CSEMS), Tufts University, 2005-2009

Student Volunteer

- Conference on Human Factors in Computer Systems (CHI) 2006, 2007, 2009

Professional Membership

- ACM Special Interest Group on Computer-Human Interaction (SIGCHI)
- Greater Boston chapter of ACM Special Interest Group on Computer-Human Interaction (SIGCHI)
- Association for Computing Machinery (ACM)
- Institute of Electrical and Electronics Engineers (IEEE)
- Founding Team, Boston CHI Labs, 2008
- Computing Research Association Committee on the Status of Women in Computing Research (CRA-W) Graduate Cohort for Women Program 2006, 2007, 2008
- Tufts Women in Computer Science (WICS)

Other Activities

- Technical Leadership Advisory Board on Brain-Computer Interfaces, Microsoft Research, 2018
- Mentor, CRA/CDC Sponsored Distributed Research Experience for Undergraduates, 2015, 2017.
- Mentor, CRA-W Sponsored Collaborative Research Experience for Undergraduates, 2015-2016.
- I³ Harvard College Innovation Challenge Judge, 2009, 2010, 2011, 2012, 2013
- Harvard University Admissions Interviewer for prospective students, 2003-2013
- Radcliffe Mentor to under-represented computer science undergrads, 2003-2004, 2011-12
- Student Founder of Technology and Entrepreneurship Center at Harvard, 2000

TEACHING

Worcester Polytechnic Institute, Worcester, MA

Brain-Computer Interaction (CS525 Special Topic) - graduate

Spring, 2024

Human-Computer Interaction (CS3041) - undergraduate

C term, 2024

Human-Computer Interaction (CS3041) - undergraduate	D term, 2023
Human-Computer Interaction (CS3041) - undergraduate	B term, 2022
Human-Computer Interaction (CS3041) - undergraduate	D term, 2022
Brain-Computer Interaction (CS525 Special Topic) - graduate	Spring, 2022
Human-Computer Interaction (CS3041) - undergraduate	B term, 2021
Human-Computer Interaction (CS3041) - undergraduate	D term, 2021
Brain-Computer Interaction (CS525 Special Topic) - graduate	Spring 2021
Human-Computer Interaction (CS3041) - undergraduate	B term, 2020
Brain-Computer Interaction (CS525 Special Topic) - graduate	Spring 2020
Human-Computer Interaction (CS3041) - undergraduate	D term, 2020
Human-Computer Interaction (CS3041) - undergraduate	B term, 2019
Human-Computer Interaction (CS 546) - graduate	Spring, 2019
Human-Computer Interaction (CS 3041) - undergraduate	D term, 2019

Undergraduate Major Qualifying Projects (MQPs)

Creating a Survey Tool for Users of American Sign Language, Jenna Tripoli, Juliana Porto, Julia Albrecht. Computer Science. Co-advised with Shruti Mahajan and Khulood Alkhudaidi. Honorable Mention for Provost's Award for Best MQP in Computer Science.	2024
Voice Control of a Hand Exoskeleton for Traumatic Brain Injury Patients with Motor Impairments and Aphasic Speech, Connor Gaudette (Biomedical Engineering and Robotics Engineering), Allison Rozear (Interdisciplinary), Keenan Segenchuk (Computer Science), Matthew McGourty (Computer Science). Co-advised with Tess Meier, Christopher Nycz, Gregory Fischer.	2024
Developing a Brain-Computer Interface to Enhance Storytelling in Games with the Identification of Cognitive States. Andrew Nguyen, James Cao, Jagger Polvino, Computer Science. Co-advised with Max Chen and Gillian Smith.	2024
Comroddity, the Augmented Reality Game Show. John Carrotta (Computer Science & Interactive Media and Game Development), Justin Santiago-Wonoski (Computer Science), Niralya Sundararajan (Computer Science & Interactive Media and Game Development), Madelyn Veccia (Interactive Media and Game Development). Co-advised with Melissa Kagen. IMGD's MQP Award in Innovation.	2024
Sewn Into Memory: Reliving Memories Through an AR Quilt. Amanda Jones, Megan Letendre, Elise Nerden, Computer Science. Co-advised with Shruti Mahajan and Max Chen.	2023
Developing a Brain-Computer Interface to Enhance Learning with the Identification of Cognitive States. David Danielian, Computer Science. Co-advised with Alicia Howell-Munson.	2023
Advancing Tools for Classifying Brain Signals with Time Series Models. Patrick Houlihan, Computer Science. Co-advised with Rodica Neamtu.	2022
Towards Inclusive Learning and Research with Sign Language Surveys. Isabelle Cordova, Brittany Henriques, User Experience.	2022
IndexPen: Two Finger In-Air Text Input System Using Millimeter-Wave Radar Sensor with Deep Learning Approach, Haowen Wei, Computer	2021

Science and Electrical and Computer Engineering. Co-advised with Kaveh Pahlavan. 2021-2022.	
BrainEx: Visual Exploration and Discovery in Time Series Data. Michael Clements, Andrew Nolan, Jackson Powell. Computer Science. Co-supervised with Rodica Neamtu.	2021
Expanding NIRS Auto ML (NAML) to Better Facilitate Neural Data Analysis. Ellery Buntel, Computer Science. Co-supervised with Rodica Neamtu.	2021
Developing and Studying Novel Sign Language Technology. Michelle Santacreu, Interdisciplinary Major in User Experience.	2021
Applying HCI Design Practices to the Design of the BrainEx User-Interface to Facilitate fNIRS Research. Kyra Bresnahan, Margaret Goodwin, Yihan Li, Computer Science. Co-supervised with Rodica Neamtu.	2020
Anomaly Detection in Time Series Brain Data Collected Using Functional Near-Infrared Spectroscopy. Petra Kumi, Computer Science and Math. Co-supervised with Rodica Neamtu and Suzanne Weekes. <i>Provost's Award for Best MQP in Mathematical Sciences.</i>	2020
Implementation of Desktop at Fingertip with mmWave Short Range Radar Technology. Ziheng Li and Aung Khant Min, Computer Science and Electrical and Computer Engineering. Co-supervised with Prof. Kaveh Pahlavan.	2020
NirsAutoML: Building an automated classification platform for fNIRS data, Fareya Ikram, Computer Science. Co-supervised with Rodica Neamtu.	2019
Applying HCI Design Practices to the Design of the BrainEx User-Interface to Facilitate fNIRS Research, Vandana Anand, Computer Science. Co-supervised with Rodica Neamtu.	2019
AR Assisted Cooking, Benjamin Hylak and Mona Elokda, User Experience Engineering (Custom Major) and Electrical and Computer Engineering. Co-supervised with Gillian Smith and Maqsood Mughal.	2019
Undergraduate Interactive Qualifying Projects (IQPs)	
Piloting a Greenhouse Gas Emissions Audit Protocol for the City of Eilat's Environmental Unit. Brett D. Cohen, Nicholas J. Manz, Adrianna L. Tagayun, Nadav Y. Konstantine. WPI Eilat Project Center. Co-Advised with Prof. Isa Bar-On and Tess Meier.	2023
Automated Detection of Jackals and Foxes in the Arava Valley. Lillian Carleu, Liam Hall, Jacob Reiss, Jason Rockmael. WPI Eilat Project Center. Co-Advised with Prof. Isa Bar-On and Tess Meier.	2023
Advancing Medjool Date Research using the Date Sorting Machine. Matthew Adam, Ryan Antes, Conner Gaudette, Eli Hoffberg. WPI Eilat Project Center. Co-Advised with Prof. Isa Bar-On and Tess Meier.	2023
Achieving Clarity: Separating Sediments from Argan Oil. Cory Abraham, Alison McNicholas, Jonathan Santos, Ariel Shirzadi. WPI Eilat Project Center. Co-Advised with Prof. Isa Bar-On.	2023

Improving and Automating the Manual Argan Nut Sorting Process. Conner McKevitt, Elliot Dunham, Raman Kaushik, Nathan Raymond. WPI Eilat Project Center. Co-Advised with Prof. Isa Bar-On.	2023
Environmental Audit of Beertzinut Beer Brewery in the Southern Arava. Hunter Carey, Casey Frommer, Ryker Germain, Nina Quattromani. WPI Eilat Project Center. Co-Advised with Prof. Isa Bar-On.	2023 2021
Understanding User Perceptions and Accuracy of Real-time In-Air Text Entry With Millimeter Wave Radar. Haowen Li, Co-supervised with Kaveh Pahlavan, WPI, 2021.	2021
Brain Wave Analysis Case Study. Ellery Buntel, Co-supervised with Rodica Neamtu.	2020
Yoga and Brain Function, Han Liu, Co-Advised with Snehalata Kadam, WPI.	

Independent Study Courses:

Developing Novel Sign Language Technology, Evans Owusu	B term, 2021
React App for Brain Signal Data Analysis, David Danielian	A term, 2021
Machine Learning Software for HCI, Chau Do	D term, 2021
BCI Tool Tutorials, Ellery Buntel	D term, 2021
Interface Design Project, Jonathan Coelho	C term, 2021
Language Learning and fNIRS, Claire Nicolas (undergraduate)	A term, 2020
Partisanship in Social Media, Christopher Micek (graduate)	Fall, 2019
Application of fNIRS with AX-CPT, Alicia Howell-Munson (undergraduate)	D term, 2019
Brain-Computer Interfaces, Erden Oktay (graduate)	Spring, 2019
Brain-Computer Interfaces, Jayesh Dubey (graduate)	Spring, 2019
Human-Computer Interaction, Neuroimaging and Machine Learning, Alicia Howell-Munson (graduate)	Spring, 2019
Interactive Machine Learning, Ruixue Liu (graduate)	Fall, 2018

Drexel University, Philadelphia, PA

Graphical User Interfaces (CS338) - undergraduate	Fall, 2016 Winter, 2016 Winter 2015 Winter 2014
Developing User Interfaces (CS530) - graduate	Spring, 2018 Summer, 2017 Spring, 2016 Fall, 2014
Brain Computer Interaction (CS680) - graduate	Spring, 2014

Independent Study Courses:

Statistical and Machine Learning Methods for fNIRS Data Analysis, Leah Friedman (undergraduate)	Fall, 2017 Fall, 2017
Online Adaptive Learning, AJ St. Aubin (graduate)	Winter, 2017
Adaptive BCI for Intelligent Tutoring System, Ruixue Liu (graduate)	

Human Interaction with Virtual Agents, Reza Moradinezhad (grad)	Winter, 2017
Human-Centered Development of SCORE, Tenell Rhodes (graduate)	Fall, 2016
fNIRS Data-Driven Interfaces, Aaron Segal (graduate)	Fall, 2016
Adaptive BCI Based on Users' Cognitive State 2, Denisa Qori (graduate)	Fall, 2016
Adaptive BCI Based on Users' Cognitive State, Denisa Qori (graduate)	Summer, 2016
Methods in fNIRS Brain Imaging Analysis, Reza Moradinezhad (graduate)	Summer, 2016
Human-Centered Design & Eval of Lilypad System, Tenell Rhodes (grad)	Spring, 2016
Experimental Design in HCI, Shelby Keating (undergraduate)	Fall, 2016
Brain-Computer Interfaces for Learning, Stevie-Mari Hawkins (graduate)	Winter, 2015
Machine Learning in Brain-Computer Interfaces, Amelia Solon (graduate)	Winter, 2015
Brain-Computer Interfaces in Motor Vehicles, Arudra Venkat (graduate)	Fall, 2014
Privacy Concerns in Brain-Computer Interfaces, Rebekah Overdorf (graduate)	Summer, 2014

Massachusetts Institute of Technology, Cambridge, MA

Instructor – Human Values and Technology Seminar

Spring, 2012

Tufts Department of Computer Science, Medford, MA

Brain-computer Interface Seminar

Fall, 2009

Graduate Leader – Computer Science, Engineering, Math Scholars

2005-2009

Instructor – Introduction to Digital Information

Summer, 2007

Teaching Assistant – Theory of Computation

Summer, 2007

Teaching Assistant – Human-Computer Interaction

Spring, 2007

Laboratory Instructor – Introduction to Digital Information

Fall, 2006

Teaching Assistant – Human-Computer Interaction

Spring, 2006

Laboratory Instructor – Data Structures

Fall, 2005

SUPERVISING

Doctoral Research Supervisor:

- Khulood Alkhudaidi, Computer Science, Worcester Polytechnic Institute. (current student)
- Christopher Micek, Computer Science, Worcester Polytechnic Institute (current student).
- Max Chen, Computational Media, Worcester Polytechnic Institute (current student). Co-advisor with Gillian Smith.
- Shruti Mahajan, “Creating Signed Language Resources to Increase Access and Representation of the Deaf Community and Advance SL-centered Research,” Computer Science. 2024. Worcester Polytechnic Institute.
- Alicia Howell-Munson, “Passive Brain-Computer Interfaces for Non-Medical Applications,” Bioinformatics & Computational Biology. 2023. Worcester Polytechnic Institute.
- Reza Moradinezhad, “Toward Trust-Adaptive Embodied Virtual Agents,” Computer Science, 2022. Drexel University.
- Denisa Qori, “On the Real-World Interactivity Potential of Minimalistic Knitted Sensors at the Intersection of Artificial Intelligence and User Experience,” Computer Science, December, 2021, Drexel University.
- Ruixue Liu, “Decoding Cognitive States from fNIRS Neuroimaging Data Using Machine Learning,” Computer Science, December 2020, Worcester Polytechnic Institute.
- Fei Gao, “Modeling Teamwork of Human-Agent Teams,” Engineering Systems Division, February, 2016, Massachusetts Institute of Technology. (co-supervisor)

- Jason Ryan, “Assessment Methods for Collaborative Human-Automation Systems,” Engineering Systems Division, July 2014, Massachusetts Institute of Technology. (co-supervisor)

Masters Research Supervisor:

- Christopher Micek, “Effects of Digital Jury Moderation on the Polarization of Social Media Users,” Computer Science, WPI. June 2022.
- Alicia Howell-Munson, Bioinformatics and Computational Biology, WPI. August, 2019.
- Kim Jackson, “Development and Evaluation of a Collision Avoidance System for Supervisory Control of a Micro Aerial Vehicle,” Aeronautics and Astronautics, Massachusetts Institute of Technology. June 2012.
- Christopher Berardi, “Investigating the Efficacy of Terrorist Networks Visualizations,” System Design and Management, Massachusetts Institute of Technology. January 2013.
- Pallavi Powale, “Development and Evaluation of an Alerting System for Emergency Responders,” Course VI (Computer Science), Massachusetts Institute of Technology. June 2013.
- Radhika Malik, “Preventative Ergonomic Risk Scheduling,” Course VI (Computer Science), Massachusetts Institute of Technology, June 2013.
- Margarita Parasi, Computer Science, Tufts University. 2010. (co-supervisor)
- Nada Attar, Computer Science, Tufts University. 2009. (co-supervisor).

Undergraduate Research Supervisor:

- Alec Norton, Summer Training in Arts & Sciences Research (STAR) Program, WPI, Summer 2024.
- Reilly Desai, Early Research Experience in E Term, WPI, Summer 2023.
- Julia Albrecht, NSF REU, WPI, Summer 2023.
- Amanda Jones, WPI, Summer 2022.
- Nikola Grozdani, Early Research Experience in E Term, WPI, Summer 2022.
- Humza Qureshi, Early Research Experience in E Term, WPI, Summer 2022.
- Khash Hatami, NSF REU in Data Science, Summer, 2022.
- Maya Liao, NSF REU in Data Science, Summer 2022.
- Eric Schmid, WPI, Summer 2021.
- Lilly-Beth Linnell, WPI, Summer 2021.
- Sophia Silkaitis, NSF REU, WPI, Summer 2021.
- Victoria Buyck, NSF REU, WPI, Summer 2021.
- Brittany Henriques, NSF REU, WPI, Summer 2021.
- Dang Tran, Early Research Experience in E Term, WPI, Summer 2021.
- Evans Owusu, Early Research Experience in E Term, WPI, Summer 2021.
- Ally Salvino, Early Research Experience in E Term, WPI, Summer 2020.
- Zijian Guan, Early Research Experience in E Term, WPI, Summer 2020.
- Eric Schmid, NSF REU, Computer Science Internship Program, WPI, Summer 2020.
- James Plante, NSF REU, Computer Science Internship Program, WPI, Summer 2020.
- Ellery Buntel, NSF REU, WPI, Summer 2020.
- Chau Do, Computer Science Internship Program, WPI, Summer 2020.
- Molly Sunray, Computer Science Internship Program, WPI, Summer 2020.
- Claire Nicholas, Summer Research Intern, WPI, Summer 2020.
- Hannah Borges, Summer Research Intern, WPI, Summer 2020. Yihan (Sylvia) Lin, DraftKings Fellowship, WPI, Summer 2019.
- Hannah Borges, DraftKings Fellowship, WPI, Summer 2019.
- Chau Do, Early Research Experience in E Term, WPI, Summer 2019.
- Leah Friedman, Co-op student, April-June 2018. “Creating Neuroadaptive Learning Technology Responsibly with Early Stakeholder Input,” CRA-W/CDC Collaborative Research Experience for Undergraduates (CREU). September, 2018-June, 2019.

- Aria Kim, Williams College, CRA/CDC Distributed Research Experience for Undergraduates, Summer 2017.
- Caitlin McElwee, Rowan University, "Using Machine Learning on fNIRS Data to Detect Changes in Working Memory Load," CRA/CDC Distributed Research Experience for Undergraduates, Summer 2017.
- Anush Lingamoorthy, Co-op student, April-September 2017.
- Juan Garcia Lopez, Co-op student, April-September 2017.
- Jeremy Solomon, Co-op student, April-September 2017.
- Weidi Tang, Co-op student, April-September, 2017.
- Safa Aman, "Assessing Computer Interfaces to Enhance Creative Thinking," Students Tackling Advanced Research (STAR) Scholar Program, Computer Science, Drexel College of Computing & Informatics, Summer, 2016.
- Monica Jesteadt, "Using fNIRS to Study Brain Processes During the Use of Personalized Learning Environments," Students Tackling Advanced Research (STAR) Scholar Program, Computer Science, Drexel College of Computing & Informatics, Summer, 2016.
- Enioluwa Segun, "Live Streaming and Analysis of Biosensor Data to Improve Human-Computer Interaction," Students Tackling Advanced Research (STAR) Scholar Program, Computer Science, Drexel College of Computing & Informatics, Summer, 2016.
- Jianfei Li, Coop student, September, 2015 – March, 2016.
- Calan Farley, "BCIs and Driving," Coop Project, March-September, 2015.
- Shelby Keating, "Leveraging Brain Data in Intelligent Tutoring Systems," Coop Project, March-September, 2015. CRA-W/CDC Collaborative Research Experience for Undergraduates (CREU). September, 2015-June, 2016.
- Phoebe Wooldridge, "Improving the fNIRS Dashboard Interface," CRA/CDC Distributed Research Experience for Undergraduates, Summer 2015.
- Craig Carr, "fNIRS Dashboard," Students Tackling Advanced Research (STAR) Scholar Program, Computer Science, Drexel College of Computing & Informatics, Summer 2015.
- Patrick Hislop, "fNIRS Dashboard: Launcher project," Students Tackling Advanced Research (STAR) Scholar Program, Computer Science, Drexel College of Computing & Informatics, Summer, 2015.
- Paritosh Gupta, "Using fNIRS for Brain-Computer Interfaces," Students Tackling Advanced Research (STAR) Scholar Program, Computer Science, Drexel College of Computing & Informatics, June, 2014-present.
- My Le, "Future HCI Research Project," Coop Project, March-June, 2015.
- Radhika Malik, "Application of machine learning techniques to identify brain activity patterns in the Brainput system," Undergraduate Advanced Project, Course VI (Computer Science), 2011-2012, Massachusetts Institute of Technology.
- Pallavi Powale, "Brain-Computer UI Development using fNIRS Technology," Undergraduate Advanced Project, Course VI (Computer Science), 2011-2012, Massachusetts Institute of Technology.
- Rodolfo Alarcon, "Functional Near-Infrared Spectroscopy Data Analysis Using MATLAB: Improving Human-Computer Interaction," Course VI (Computer Science), 2011-2012, Massachusetts Institute of Technology
- Carolyn Chang, "Using Variable-Rate Alerting to Counter Boredom in Human Supervisory Control," Course VI (Computer Science), 2012-2013, Massachusetts Institute of Technology
- Dylan Joss, "Attention Span Fluctuations in Automation Simulations," Course VI (Computer Science), 2012-2013.
- Hadar Rosenhand, NSF Computing Undergraduates Scholars Program, Spring 2007, Tufts University.
- Kelly Moran, NSF Computing Undergraduates Scholars Program, Spring 2007, Tufts University.

Visiting Researchers

- Anna Eng, “Real-time Brain Sensing for Personalized Learning Environments,” NSF-Sponsored Research Experience for Teachers Site on Engineering for People and the Planet: WPI Research Experiences for Teaching Integrated STEM, Summer 2022.
- Joe Lima, “Real-time Brain Sensing for Personalized Learning Environments,” NSF-Sponsored Research Experience for Teachers Site on Engineering for People and the Planet: WPI Research Experiences for Teaching Integrated STEM, Summer 2022.
- Kyle Ellis, “Mind Wandering: Using Brain Data to Keep Learners Learning,” NSF-Sponsored Research Experience for Teachers in Machine Learning for Human-Centered Computing, Summer 2018.
- Damian Baraty, “Losing Focus: The Brain Speaks,” NSF-Sponsored Research Experience for Teachers in Machine Learning for Human-Centered Computing, Summer 2018.
- Patricia Rahmlow, “Towards Automatic Detection of Rule Learning Through fNIRS Brain Imaging,” NSF-Sponsored Research Experience for Teachers in Machine Learning for Human-Centered Computing, Summer 2017.
- Gloria Houseman, “Towards Automatic Detection of Rule Learning Through fNIRS Brain Imaging,” NSF-Sponsored Research Experience for Teachers in Machine Learning for Human-Centered Computing, Summer 2017.
- Gloria Houseman, “Direct Brain Assessment for Algebra 2,” NSF-Sponsored Research Experiences for Teachers in Engineering and Computer Science Site for Big Data, Machine Learning and CS Principles, Summer 2015.
- Bruce Karpe, NSF-Sponsored Research Experiences for Teachers in Engineering and Computer Science Site for Big Data, Machine Learning and CS Principles, Summer 2015.

Member of Dissertation/Thesis Committee:

- Yiqin Zhao, Ph.D. Dissertation Committee Member, Computer Science, WPI. Spring 2025. Primary Advisor: Tian Guo.
- Yiren Ding, “Assessments, Modeling, and Platforming for Data Visualization Literacy,” Ph.D. Dissertation Committee Member, Computer Science, WPI. Primary Advisor: Lane Harrison.
- Tess Meier, “Exploring Hand Exoskeleton Assistance and Rehabilitation through the Lens of Neuroscience,” Ph.D. Dissertation Committee Member, Robotics Engineering, WPI. December 2024. Primary Advisor: Gregory Fischer.
- Deniz Sonmez Unal, “Towards Continuous Estimation of Student Cognitive States: A Multimodal Approach,” Ph.D. Dissertation Committee Member, Intelligent Systems, University of Pittsburgh. July 2024. Primary Advisor: Erin Walker.
- Atifa Sarwar, “Machine Learning Models for Passive Pre-symptomatic Detection of Covid-19 from Smart Wearable Data,” Ph.D. Dissertation Committee Member, Computer Science, WPI. July, 2024. Primary Advisor: Emmanuel Agu.
- Bridget Rinkel, “G-Induced Loss of Consciousness (GLOC) Predictive Model Development,” M.S. Thesis Committee, Neuroscience, Worcester Polytechnic Institute. April, 2024. Primary Advisor: Adam Lammert.
- Lucca Eloy, “Enhancing Adaptive Human-Agent Teaming Systems with Functional Near-Infrared Spectroscopy,” Ph.D. Dissertation External Committee Member, Computer Science & Cognitive Science, University of Colorado Boulder. October, 2022. Primary Advisor: Leanne Hirshfield.
- Max Chen, “Combining Brain-Computer Interface and Quilting in a Computational Narrative Game,” Reader and Thesis Committee Member, Interactive Media and Games, WPI. Expected, 2022. Primary Advisor: Gillian Smith.
- Jayam Patel, “Improving Human Performance in Multi-Human Multi-Robot Interaction,” Ph.D. Dissertation Defense Committee, Robotics Engineering, WPI, Feb, 2020. Primary Advisor: Carlo Pinciroli.
- Jayam Patel, “Improving Human Performance in Multi-Human Multi-Robot Interaction,” Ph.D. Dissertation Proposal Committee, Robotics Engineering, WPI, September, 2020. Primary Advisor: Carlo Pinciroli.
- Leah Kulp, “Towards an Adaptive, Context-aware Checklist for Concurrent Use in Dynamic Medical Settings,” Ph.D. Dissertation Defense Committee, Information Science, Drexel, June, 2020. Primary Advisor: Aleksandra Sarcevic.

- Ehsan Khosroshahi, Ph.D. Dissertation Defense Committee, Computer Science, Drexel, Summer, 2019. Primary Advisor: Dario Salvucci.
- Jayam Patel, “Mixed-Granularity Human-Swarm Interaction,” Ph.D. Qualifier Committee, Robotics Engineering, WPI, 2018. Primary Advisor: Carlo Pinciroli.
- Jennifer Engimann, “Interactive Team Learning of Coordinated Behaviors: Toward a Cognitive Model for Square Dancing,” Ph.D. Candidacy Committee, Computer Science, Drexel, 2018. Primary Advisor: Dario Salvucci.
- Ilkka Kosunen, “Exploring the Dynamics of the Biocybernetic Loop in Physiological Computing,” Ph.D. External Examiner, University of Helsinki, 2017. Primary Advisor: Giulio Jacucci.
- Rebekah Overdorf, “Bridging Distinct Domains in Privacy Related Learning Problems,” Ph.D. Dissertation Committee, Computer Science, Drexel, 2017. Primary Advisor: Rachel Greenstadt.
- Anushay Furqan, “Learnability Through Adaptive Discovery Tools in Voice User Interfaces,” M.S. Thesis Committee, Digital Media, Drexel, 2017. Primary Advisor: Jichen Zhu.
- Chelsea Myers, Ph.D. Qualifying Exam Committee, Digital Media, Drexel, 2017. Primary Advisor: Jichen Zhu.
- Brett Harte, “The Use of the Animation Principle Exaggeration Within Interactions in VR,” M.S. Thesis Committee, Digital Media, Drexel, 2017. Primary Advisor: Stefan Rank.
- Rebekah Overdorf, “Domain Adaptation in Privacy Problems,” Ph.D. Dissertation Proposal Committee, Computer Science, Drexel, January, 2017. Primary Advisor: Rachel Greenstadt.
- Alexis Morris, “FRIEND: A Brain-Monitoring Agent Architecture for Adaptive Systems,” Ph.D. Dissertation Committee, Computer Science, University of New Brunswick. External examiner. September 2016. Primary Advisor: Dawn MacIsaac.
- Felicia Tucker, “Player Choices In a Visual Novel with Round Character Avatars,” M.S. Thesis Committee, Digital Media, Drexel, September 2016. Primary Advisor: Frank Lee.
- Ahmad Pourshoghi, “Application of Machine Learning and Functional Data Analysis in Classification and Clustering of Functional Near Infrared Spectroscopy Signal in Response to Noxious Stimuli” Ph.D. Dissertation Committee, Biomedical Engineering, Drexel, May 2014. Primary Advisors: Kambiz Pourrezaei and Issa Zakeri.
- Cathy Lu, “A Biofeedback-based Approach to Horror Game Design,” M.S. Thesis Committee, Digital Media, Drexel, December 2014. Primary Advisor: Stefan Rank.
- Ehsan Khosroshahi, “Representation and Simulation of Brain and Body in Cognitive Architectures,” Ph.D. Candidacy Committee, Computer Science, Drexel, November 2014. Primary Advisor: Dario Salvucci.
- Rebekah Overdorf, “Domain Adaptation and Stylometry,” Computer Science, Ph.D. Candidacy Committee, Drexel, December 2014. Primary Advisor: Rachel Greenstadt.
- Robert Lass, “Distributed Constraint Reasoning for the Real World,” Computer Science, Ph.D. Proposal Committee, Drexel, October 2014.
- Ahmad Pourshoghi, “Using Machine Learning Methods to classify functional Near Infrared Spectroscopy (fNIRS) Signal in Response to Painful Stimuli” Ph.D. Proposal Committee, Biomedical Engineering, Drexel, May 2014. Primary Advisors: Kambiz Pourrezaei and Issa Zakeri.

PRESS

- WPI Journal (November 14, 2023). “The Humanity of Robots in the Workplace.” <https://wp.wpi.edu/journal/articles/the-humanity-of-robots-in-the-workplace/>
- WPI Journal (November 14, 2023). “Wearable Robot Offers Hope.” <https://wp.wpi.edu/journal/articles/wearable-robots-offers-hope/>
- AI Business (October 12, 2023). “AI Helps Neuroscientists Understand Depression Better.” <https://aibusiness.com/nlp/ai-helps-neuroscientists-understand-depression-better>
- ‘WPI News (October 21, 2021). “WPI to Host Hands-On Research Experiences for Worcester-Area Teachers to Support K-12 STEM Education.” <https://www.wpi.edu/news/wpi-host-hands-research-experiences-worcester-area-teachers-support-k-12-stem-education>

- *TechXplore* (May 3, 2021). "Examining how humans develop trust towards embodied virtual agents," <https://techxplore.com/news/2021-05-humans-embodied-virtual-agents.html>
- *Worcester Telegram* (January 10, 2020). "WPI researcher gets \$1M grant to develop technology for deaf users," <https://www.telegram.com/news/20200110/wpi-researcher-gets-1m-grant-to-develop-technology-for-deaf-users>.
- *WPI News* (January 8, 2020). "WPI to Help Develop Novel Sign Language Technology," <https://www.wpi.edu/news/wpi-help-develop-novel-sign-language-technology>
- *WBZ 4 CBS News* (April 2, 2019). "WPI 'Thinking Cap' Study Could Improve Online Learning," <https://boston.cbslocal.com/2019/04/02/erin-solovey-wpi-thinking-cap-study/>
- *NSF Science Now: Episode 62*. <https://science360.gov/obj/video/30dbb192-d5db-4588-a7b4-c94a07ef5686/nsf-science-now-episode-62>
- *Worcester News Tonight* (Jan 31, 2019). "WPI Thinking Cap," <https://www.youtube.com/watch?v=4npohW82vVA&feature=youtu.be&t=666>
- *WPI News* (Jan 29, 2019). "A New Kind of Thinking Cap: WPI Researchers Are Using Brain Imaging to Improve Personalized Learning Environments," <https://www.wpi.edu/news/new-kind-thinking-cap-wpi-researchers-are-using-brain-imaging-improve-personalized-learning>
- *Drexel College of Computing & Informatics News*. (August 8, 2017). "Computer Science Research with Social Impact Featured at RETHink Showcase," <http://drexel.edu/ccci/news-events/news/2017/August/computer-science-research-with-social-impact-featured-at-rethink-showcase/>
- *EXEL Magazine*. (September, 2016). "Driven to Distraction," <http://exelmagazine.org/article/driven-to-distraction/>
- *New Scientist*. (February 9, 2016). "Mind-reading tech helps beginners quickly learn to play Bach," <https://www.newscientist.com/article/2076899-mind-reading-tech-helps-beginners-quickly-learn-to-play-bach/>
- *New Scientist*. (December 17, 2013). "Mind-reading light helps you stay in the zone," <http://www.newscientist.com/article/mg22029484.500-mindreading-light-helps-you-stay-in-the-zone.html>
- *New Scientist*. (February 20, 2013). "Brain scanning headset monitors your mental workload," <http://www.newscientist.com/article/mg21729056.500-brainscanning-headset-monitors-your-mental-workload.html?full=true>
- *Discovery News*. (May 21, 2012). "Fix Stress Overload with a 'Brainput' System," <http://news.discovery.com/tech/brainput-120521.html>
- *Smartplanet Smart Takes*. (May 20, 2012). "Wearable brain sensor helps workers multitask," <http://www.smartplanet.com/blog/smart-takes/wearable-brain-sensor-helps-workers-multitask/26566>
- *IEEE Spectrum Tech Talk* (May 17, 2012). "Wearable Brain Scanner Tells Your Computer When You're Overwhelmed," <http://spectrum.ieee.org/tech-talk/biomedical/imaging/wearable-brain-scanner-tells-your-computer-when-youre-overwhelmed>
- *Wired UK*. (May 15, 2012). "MIT's 'Brainput' offloads human multitasking to a computer," <https://users.wpi.edu/~esolovey/papers/WiredUK.May.2012.pdf>
- *Engadget*. (May 15, 2012). "MIT's Brainput reads your mind to make multitasking easier," <http://www.engadget.com/2012/05/15/mits-brainput-reads-your-mind-to-make-multitasking-easier/>
- *Technology Review*. (May 14, 2012). "A Computer Interface that Takes a Load Off Your Mind," <https://www.technologyreview.com/2012/05/14/19653/a-computer-interface-that-takes-a-load-off-your-mind/>
- *Extremetech*. (May 14, 2012). "MIT's Brainput boosts your brain power by offloading multitasking to a computer," <http://www.extremetech.com/extreme/129279-mits-brainput-boosts-your-brain-power-by-offloading-multitasking-to-a-computer>
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