NIKOLAS MARTELARO

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Pittsburgh, PA 15213 USA
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I explore the future of how we design interactive, autonomous, and computational systems. My research focuses on creating new ways for people to collaboratively design. This includes collaborations among designers, collaborations with users, and collaborations with intelligent machines. I blend a background in mechanical engineering, mechatronics, computing, data collection, and product design to develop new interactive systems. My work involves observing people using intelligent systems and designing new interactive devices. My research has implications for human-robot interaction, autonomous cars, and human-centered artificial intelligence. My teaching aims to provide designers with the skills to use new technologies and develop systems that focus on the needs of people.

EDUCATION

2012–2018   **Stanford University** | Stanford, CA
Ph.D. in Mechanical Engineering
DISSERTATION: *The Needfinding Machine*
COMMITTEE: Larry Leifer, Wendy Ju, Pamela Hinds, James Landay

2012–2014   **Stanford University** | Stanford, CA
M.S. in Mechanical Engineering

2008–2012   **Franklin W. Olin College of Engineering** | Needham, MA
B.S. Engineering: Design

EMPLOYMENT

2020–   **Assistant Professor**
Human-Computer Interaction Institute
Carnegie Mellon University

2018–2019   **Technology Research & Development Associate Principal**
Accenture Technology Labs

2017   **Research Intern**
Microsoft Research
ADVISOR: Shamsi Iqbal

PUBLICATIONS

Journal Articles

David Weinberg, Healy Dwyer, Sarah E. Fox, **Nikolas Martelaro**. "Sharing the Sidewalk: Observing Delivery Robot Interactions with Pedestrians during a Pilot in Pittsburgh, PA". In: *Multimodal Technologies and Interaction* 7.5 (2023). ISSN: 2414-4088. DOI: 10.3390/mti7050053.

Tong Wu, **Nikolas Martelaro**, Simon Stent, Jorge Ortiz, Wendy Ju. "Learning When Agents Can Talk to Drivers Using the INAGT Dataset and Multisensor Fusion". In: *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 5.3 (Sept. 2021).

Ozgur Eris, **Nikolas Martelaro**, Petra Badke-Schaub. "A Comparative Analysis of Multimodal Communication During Design Sketching in Co-located and Distributed Environments". In: *Design Studies* 35.6 (2014), pp. 559–592.

Chapters

Nikolas Martelaro, Wendy Ju. "The Needfinding Machine". In: *Social internet of things*. Springer, Cham, 2019, pp. 51–84.

Nikolas Martelaro, Wendy Ju, Mark Horowitz. "The Interaction Engine". In: *Design Thinking Research*. Springer, Cham, 2018, pp. 147–169.

David Sirkin, Sonia Baltodano, Brian Mok, Dirk Rothenbücher, Nikhil Gowda, Jamy Li, **Nikolas Martelaro**, David Miller, Srinath Sibi, Wendy Ju. "Embodied Design Improvisation for Autonomous Vehicles". In: *Design thinking research*. Springer, Cham, 2016, pp. 125–143.

Nikolas Martelaro, Shameek Ganguly, Martin Steinert, Malte Jung. "The Personal Trait Myth: A Comparative Analysis of the Innovation Impact of Design Thinking Tools and Personal traits". In: *Design Thinking Research*. Springer, Cham, 2015, pp. 41–57.

Conference Papers (Refereed)

David Chaun-en Lin, Fabian Caba Heilbron, Joon-Young Lee, Oliver Wang, **Nikolas Martelaro**. "Videogenic: Identifying Highlight Moments in Videos with Professional Photographs as a Prior". In: *To appear in the Proceedings of the 16th ACM Conference on Creativity & Cognition*. C&C '24. Chicago, Illinois, USA: Association for Computing Machinery, 2024.

David Chaun-en Lin, **Nikolas Martelaro**. "Jigsaw: Supporting Designers to Prototype Multimodal Applications by Assembling AI Foundation Models". In: *To appear in the Proceedings of the CHI Conference on Human Factors in Computing Systems*. CHI '24. Honolulu, Hawaii, USA: Association for Computing Machinery, 2024.

David Widder, Laura Dabbish, James Herbsleb, **Nikolas Martelaro**. "Power and Play: Investigating "License to Critique"' in Teams' AI Ethics Discussions". In: *To appear at the 27th ACM Conference on Computer-Supported Cooperative Work and Social Computing*. CSCW '24. San José, Costa Rica: Association for Computing Machinery, 2024. URL: https://arxiv.org/abs/2403.19049.

Michael Feffer, **Nikolas Martelaro**, Hoda Heidari. "The AI Incident Database as an Educational Tool to Raise Awareness of AI Harms: A Classroom Exploration of Efficacy, Limitations, & Future Improvements". In: *Proceedings of the 3rd ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization*. EAAMO '23. Boston, MA, USA: Association for Computing Machinery, 2023. ISBN: 9798400703812. DOI: 10.1145/3617694.3623223. URL: https://doi.org/10.1145/3617694.3623223.

Frederic Gmeiner, Humphrey Yang, Lining Yao, Kenneth Holstein, **Nikolas Martelaro**. "Exploring Challenges and Opportunities to Support Designers in Learning to Co-Create with AI-Based Manufacturing Design Tools". In: *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. CHI '23. Hamburg, Germany: Association for Computing Machinery, 2023. ISBN: 9781450394215. DOI: 10.1145/3544548.3580999. URL: https://doi.org/10.1145/3544548.3580999.

David Chuan-En Lin, Anastasis Germanidis, Cristóbal Valenzuela, Yining Shi, **Nikolas Martelaro**. "Soundify: Matching Sound Effects to Video". In: *Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*. UIST '23. San Francisco, CA, USA: Association for Computing Machinery, 2023. ISBN: 9798400701320. DOI: 10.1145/3586183.3606823. URL: https://doi.org/10.1145/3586183.3606823.

Nikolas Martelaro, Patrick Carrington, Sarah Fox, Jodi Forlizzi. "Designing an Inclusive Mobile App for People with Disabilities to Independently Use Autonomous Vehicles". In: *Proceedings of the 14th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*. AutomotiveUI '22. Seoul, Republic of Korea: Association for Computing Machinery, 2022, pp. 45–55. ISBN: 9781450394154. DOI: 10.1145/3543174.3546850. URL: https://doi.org/10.1145/3543174.3546850.

David Chuan-En Lin, **Nikolas Martelaro**. "Learning Personal Style from Few Examples". In: *Designing Interactive Systems Conference 2021*. DIS '21. Virtual Event, USA: Association for Computing Machinery, 2021, pp. 1566–1578. I S B N: 9781450384766.

Nikolas Martelaro, Tarannum Lakdawala, Jingya Chen, Jessica Hammer. "Leveraging the Twitch Platform and Gamification to Generate Home Audio Datasets". In: *Designing Interactive Systems Conference 2021*. DIS '21. Virtual Event, USA: Association for Computing Machinery, 2021, pp. 1765–1782. I S B N: 9781450384766.

J.D. Zamfirescu-Pereira, David Sirkin, David Goedicke, Ray LC, Natalie Friedman, Ilan Mandel, **Nikolas Martelaro**, Wendy Ju. "Fake It to Make It: Exploratory Prototyping in HRI". In: *Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction*. HRI '21 Companion. Boulder, CO, USA: Association for Computing Machinery, 2021, pp. 19–28. I S B N: 9781450382908.

Nikolas Martelaro, Sarah Mennicken, Jennifer Thom, Henriette Cramer, Wendy Ju. "Using Remote Controlled Speech Agents to Explore Music Experience in Context". In: *Proceedings of the 2020 ACM Designing Interactive Systems Conference*. 2020, pp. 2065–2076.

Nikolas Martelaro, Jaime Teevan, Shamsi T Iqbal. "An Exploration of Speech-Based Productivity Support in the Car". In: *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. 2019, pp. 1–12.

Rob Semmens, **Nikolas Martelaro**, Pushyami Kaveti, Simon Stent, Wendy Ju. "Is now a good time? an empirical study of vehicle-driver communication timing". In: *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. 2019, pp. 1–12.

Nikolas Martelaro, Wendy Ju. "WoZ Way: Enabling real-time remote interaction prototyping & observation in on-road vehicles". In: *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. 2017, pp. 169–182.

Dylan Moore, **Nikolas Martelaro**, Wendy Ju, Hamish Tennent. "Making noise intentional: A study of servo sound perception". In: *2017 12th ACM/IEEE International Conference on Human-Robot Interaction (HRI*. IEEE. 2017, pp. 12–21.

David Sirkin, **Nikolas Martelaro**, Mishel Johns, Wendy Ju. "Toward measurement of situation awareness in autonomous vehicles". In: *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*. 2017, pp. 405–415.

Nikolas Martelaro, Victoria C Nneji, Wendy Ju, Pamela Hinds. "Designing HRI to Encourage More Trust, Disclosure, and Companionship, The Eleventh ACM". In: *IEEE International Conference on Human Robot Interaction*. 2016.

Nikolas Martelaro, Victoria C Nneji, Wendy Ju, Pamela Hinds. "Tell Me More: Designing HRI to encourage more trust, disclosure, and companionship". In: *HRI '16*. 2016.

Marco Spadafora, Victor Chahuneau, **Nikolas Martelaro**, David Sirkin, Wendy Ju. "Designing the behavior of interactive objects". In: *Proceedings of the TEI'16: Tenth International Conference on Tangible, Embedded, and Embodied Interaction*. ACM. 2016, pp. 70–77.

Sonia Baltodano, Srinath Sibi, **Nikolas Martelaro**, Nikhil Gowda, Wendy Ju. "The RRADS platform: a real road autonomous driving simulator". In: *Proceedings of the 7th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*. 2015, pp. 281–288.

Malte F Jung, **Nikolas Martelaro**, Pamela J Hinds. "Using robots to moderate team conflict: the case of repairing violations". In: *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction*. 2015, pp. 229–236.

Nikolas Martelaro, Malte Jung, Pamela Hinds. "Using robots to moderate team conflict: The case of repairing violations". In: *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction Extended Abstracts*. 2015, pp. 271–271.

Malte F Jung, **Nikolas Martelaro**, Halsey Hoster, Clifford Nass. "Participatory materials: having a reflective conversation with an artifact in the making". In: *Proceedings of the 2014 conference on Designing Interactive Systems*. 2014, pp. 25–34.

Ozgur Eris, **Nikolas Martelaro**. "A Comparative Analysis of Sketching Interactions of Designers in Co-located and Distributed Environments". In: *Design Thinking Research Symposium - DTRS8*. DTRS8. 2010, pp. 149–162.

Invited Articles

Nikolas Martelaro, Wendy Ju. "Cybernetics and the design of the user experience of AI systems". In: *interactions* 25.6 (2018), pp. 38–41.

Workshops Papers (Refereed)

Faria Huq, Jeffrey P. Bigham, **Nikolas Martelaro**. "What's important here?: Opportunities and Challenges of LLM in retrieving information from Web

Interface". In: *Ro-FoMo:Robustness of Few-shot and Zero-shot Learning in Large Foundation Models*. 2023. U R L: https://openreview.net/forum?id=Jd8mD3SU8j.

Hyeonsu B Kang, David Chuan-En Lin, **Nikolas Martelaro**, Aniket Kittur, Yan-Ying Chen, Matthew K Hong. "BioSpark: An End-to-End Generative System for Biological-Analogical Inspirations and Ideation". In: *NeurIPS 2023 Workshop on Machine Learning for Creativity and Design*. 2023. U R L: https://arxiv.org/abs/2312.11388.

Frederic Gmeiner, Kenneth Holstein, **Nikolas Martelaro**. "Team Learning as a Lens for Designing Human–AI Co-Creative Systems". In: *Workshop on Generative AI and HCI at ACM Conference on Human-Computer Interaction (CHI '22)*. 2022.

Nikolas Martelaro, Carol Smith, Tamara Zilovic. "Exploring Opportunities in Usable Hazard Analysis Processes for AI Engineering". In: *AAAI Spring Symposium Series Workshop on AI Engineering: Creating Scalable, Human-Centered and Robust AI Systems*. 2022.

Hongyu Wang, **Nikolas Martelaro**. "End-User Puppeteering of Expressive Movement". In: *Workshop on EUP/PD Workshop at ACM/IEEE Conference on Human-Robot Interaction (HRI '22)*. 2022.

Hongyu Wang, **Nikolas Martelaro**. "Teaching Robots Expressive Movements through Puppeteering". In: *Workshop on Human-Interactive Robot Learning (HIRL) at ACM/IEEE Conference on Human-Robot Interaction (HRI '22)*. 2022.

David Weinberg, Healy Dwyer, Sarah Fox, **Nikolas Martelaro**. "Sharing the Sidewalk: Analyzing Autonomous Delivery Robot Interactions with Pedestrians". In: *Workshop on Human-Robot Interaction in Public Spaces at ACM/IEEE Conference on Human-Robot Interaction (HRI '22)*. 2022.

David Chuan-En Lin, Anastasis Germanidis, Cristóbal Valenzuela, Yining Shi, **Nikolas Martelaro**. "Soundify: Matching Sound Effects to Video". In: *5th NeurIPS Workshop on Machine Learning for Creativity and Design*. 2021.

Wendy Ju, Ilan Mandel, Kevin Weatherwax, Leila Takayama, **Nikolas Martelaro**, Denis Willett. "Remote Observation of Field Work on the Farm". Aug. 2020.

Nikolas Martelaro. "Exploring the Future of Remote User Research". Aug. 2020.

Nikolas Martelaro, Wendy Ju. "DJ Bot: Needfinding Machines for Improved Music Recommendations". In: *2017 AAAI Spring Symposium Series*. 2017.

Nikolas Martelaro. "Wizard-of-oz interfaces as a step towards autonomous HRI". In: *2016 AAAI spring symposium series*. 2016.

Nikolas Martelaro, Michael Shiloh, Wendy Ju. "The interaction engine: Tools for prototyping connected devices". In: *Proceedings of the TEI'16: Tenth International Conference on Tangible, Embedded, and Embodied Interaction*. 2016, pp. 762–765.

Demos, Videos, and Work-In-Progress (Refereed)

Howard Han, Franklin Mingzhe Li, **Nikolas Martelaro**, Daragh Byrne, Sarah E Fox. "The Robot in Our Path: Investigating the Perceptions of People with Motor Disabilities on Navigating Public Space Alongside Sidewalk Robots". In: *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility*. ASSETS '23. New York, NY, USA: Association for Computing Machinery, 2023. ISBN: 9798400702204. DOI: 10.1145/3597638.3614508. URL: https://doi.org/10.1145/3597638.3614508.

Chengzhi Zhang, Weijie Wang, Paul Pangaro, **Nikolas Martelaro**, Daragh Byrne. "Generative Image AI Using Design Sketches as Input: Opportunities and Challenges". In: *Proceedings of the 15th Conference on Creativity and Cognition*. C&C '23. Virtual Event, USA: Association for Computing Machinery, 2023, pp. 254–261. ISBN: 9798400701801. DOI: 10.1145/3591196.3596820. URL: https://doi.org/10.1145/3591196.3596820.

Nikolas Martelaro, Wendy Ju. "WoZ Way: Enabling real-time interaction prototyping and on-road observation". In: *Proceedings of the 2017 Conference on Computer Supported Cooperative Work. DOI: http://dx. doi. org/10.1145/2998181.2998293*. 2017.

Nikolas Martelaro, David Sirkin, Wendy Ju. "DAZE: a real-time situation awareness measurement tool for driving". In: *Adjunct Proceedings of the 7th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*. 2015, pp. 158–163.

Organized Workshops

Daniel Russell, Q. Vera Liao, Chinmay Kulkarni, Elena L. Glassman, **Nikolas Martelaro**. "Human-Computer Interaction and AI: What Practitioners Need to Know to Design and Build Effective AI System from a Human Perspective". In: *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems*. CHI EA '23. Hamburg, Germany: Association for Computing Machinery, 2023. ISBN: 9781450394222. DOI: 10.1145/3544549.3574170. URL: https://doi.org/10.1145/3544549.3574170.

Nikolas Martelaro, Wendy Ju. "What Could Go Wrong? Exploring the Downsides of Autonomous Vehicles". In: *12th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*. 2020, pp. 99–101.

Nikolas Martelaro, Wendy Ju. "A Panel on Cybernetics and the User Experience of AI Systems". In: *2018 AAAI Spring Symposium Series*. 2018.

Naomi T Fitter, Heather Knight, **Nikolas Martelaro**, David Sirkin. "What actors can teach robots". In: *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. 2017, pp. 574–580.

David Sirkin, **Nikolas Martelaro**, Hamish Tennent, Mishel Johns, Brian Mok, Wendy Ju, Guy Hoffman, Heather Knight, Bilge Mutlu, Leila Takayama. "Design skills for HRI". In: *2016 11th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. IEEE. 2016, pp. 581–582.

Policy Briefs

Nikolas Martelaro, Sarah Fox, Jodi Forlizzi, Raj Rajkumar, Chris Hendrickson, Stan Caldwell. *How to Make Sense of Bus Transit Automation? Considerations for policy makers on the future of human-automation teaming in the transit workforce.* Tech. rep. Carnegie Mellon University, 2022. URL: https://www.cmu.edu/traffic21/research-and-policy-papers/traffic21-policy-brief-22.1---apr-14-002.pdf.

Patents

Nikolas Martelaro, Alex M. Kass, Robert P. Dooley, Charles Jacob Foster. "Intelligent design platform using digital assistants for design process support". US20210365599A1. Nov. 2021. URL: https://patents.google.com/patent/US20210365599A1/en.

Nikolas Martelaro, Maria Pilar Ergueta McGinley. "Recommendation engine for design components". US20210264296A1. Aug. 2021. URL: https://patents.google.com/patent/US20210264296A1/en?inventor=Nikolas+Martelaro.

David William Vinson, Matthew Thomas Short, Alex Kass, Mary Elizabeth Hamilton, Sunil Shettigar, **Nikolas Martelaro**, Kahlil Gibran Fitzgerald. "Platform for generating interactive experiences at sports venues". US20210089770A1. Mar. 2021. URL: https://patents.google.com/patent/US20210089770A1/en?inventor=Nikolas+Martelaro.

RESEARCH GRANTS & GIFTS

FEDERAL GRANTS

2022-2023   **Using Technology to Transform Makers into Creative Entrepreneurs**
Funding Body: National Science Foundation - Future of Work at the
Human-Technology Frontier
Investigators: Nikolas Martelaro (PI), Wendy Ju (Co-PI), Laura Dabbish (Co-PI),
Yasmine Kotturi (Co-PI)
Amount: $150,000

2021-2024   **Supporting Designers in Learning to Co-create with AI for Complex
Computational Design Tasks**
Funding Body: National Science Foundation - Cyberlearning & Future Learning
Technology
Investigators: Nikolas Martelaro (PI), Lining Yao (Co-PI), Kenneth Holstein (Co-PI)
Amount: $850,000

2021-2022   **Equitable new mobility: Community-driven mechanisms for designing and
evaluating personal delivery device deployments**
Funding Body: National Science Foundation - Smart & Connected Communities -
Planning Grant
Investigators: Sarah Fox (PI), Patrick Carrington (Co-PI), Jodi Forlizzi (Co-PI),
Nikolas Martelaro (Co-PI), Corey Harper (Co-PI)
Amount: $150,000

2020–2021   **Inclusive Design Challenge - Stage I**
Funding Body: US Department of Transportation
Investigators: Nikolas Martelaro (PI), Patrick Carrington (Co-PI), Sarah Fox
(Co-PI), Jodi Forlizzi (Co-PI)
Amount: $300,000

CORPORATE AND FOUNDATION GIFTS & GRANTS

2023–2026   **Toyota Research Institute - Supporting Designer Creativity Through
Analogical Search and Design Constraint Management**
Investigators: Anniket Kittur (Co-PI), Nikolas Martelaro (Co-PI)
Amount: $932,907

2023–2025   **Honda Research Institute - Automatic Prediction Whether Users Detect
Changes to Virtual Content in Multi-Agent Interactions**
Investigators: David Lindlbauer (Co-PI), Nikolas Martelaro (Co-PI)
Amount: $640,460

2021–2022   **Software Engineering Institute - Hazard Analysis for AI Engineering**
Investigators: Nikolas Martelaro (PI), Carol Smith (Co-PI)
Amount: $100,000

2021–2022 **Accenture Technology Labs**
Investigators: Nikolas Martelaro (PI)
Amount: $100,000

2020–2021 **Accenture Technology Labs**
Investigators: Nikolas Martelaro (PI)
Amount: $100,000

HONORS & AWARDS

2023 **Best Paper Honorable Mention, CHI '23.** Exploring Challenges and
Opportunities to Support Designers in Learning to Co-create with AI-based
Manufacturing Design Tools. *Frederic Gmeiner, Humphrey Yang, Lining Yao,
Kenneth Holstein, and Nikolas Martelaro.*

2017 **Best Demonstration, CSCW '17.** Portland, OR. *With Wendy Ju*

2013–2018 **Graduate Research Fellowship Program** - National Science Foundation (NSF
GRFP). Awarded 2013.

2009 **Miller Research Fellowship**, Franklin W. Olin College of Engineering. Awarded
Summer 2009.

INVITED TALKS

2023 **Technische Hochschule Ingolstadt - Guest Professor**
December 12, 2023–December 21, 2023

2022 **Clemson University - Guest Talk**
December 2, 2022

2022 **Berkeley Integrated Design - Guest Talk**
November 15, 2022

2021 **Autodesk Research - Guest Talk**
September 30, 2021

2020 **Talking Robotics**
December 11, 2020
https://talking-robotics.github.io/talks/nikolas/

SELECTED PRESS COVERAGE

2023 **Associated Press** *San Francisco launches driverless bus service following robotaxi
expansion* https://apnews.com/article/autonomous-driverless-buses-robotaxi-san-
francisco-802c39fdfc57adccaea604c7ee13a128

2022 **StreetsBlog USA** *Will 'Autonomous' Buses Force Drivers Out of a Job — Or Make
Them More Important Than Ever?*

2022   https://usa.streetsblog.org/2022/05/31/will-autonomous-buses-force-drivers-out-of-a-job-or-make-them-more-important-than-ever/

2022   **Smart Cites Dive** *Autonomous transit buses will still need skilled operators, researchers say* https://www.smartcitiesdive.com/news/autonomous-transit-buses-need-drivers/624053/

2022   **Pittsburgh City Paper** *Human operators still essential in autonomous vehicles, says new CMU report* https://www.pghcitypaper.com/pittsburgh/human-operators-still-essential-in-autonomous-vehicles-says-new-cmu-report/Content?oid=21743919

2021   **Pittsburgh Post Gazette**
CMU team to examine autonomous vehicles for people with disabilities
https://www.post-gazette.com/news/transportation/2021/01/11/Carnegie-Mellon-University-federal-Department-of-Transportation-300-000-grant-people-with-disabilities-autonomous-vehicles/stories/202101080091

2021   **US Department of Transportation** (US)
Inclusive Design Challenge Semifinalists
https://www.transportation.gov/inclusive-design-challenge/inclusive-design-challenge-semifinalists

TEACHING

Spring 2024   **Rapid Prototyping of Computer Systems**
05-540/05-872/18-540/18-745/39-648

Fall 2023   **Design of AI Products and Services**
05-317/05-617

Spring 2023   **Rapid Prototyping of Computer Systems**
05-540/05-872/18-540/18-745/39-648

Fall 2022   **Design of AI Products and Services**
05-317/05-617

Spring 2022   **Rapid Prototyping of Computer Systems**
05-540/05-872/18-540/18-745/39-648

Fall 2021   **Interaction Design Studio I**
05-651

Spring 2021   **Rapid Prototyping of Computer Systems**
05-540/05-872/18-540/18-745/39-648

Spring 2020   **Rapid Prototyping of Computer Systems**
05-540/05-872/18-540/18-745/39-648

ADVISING

2022–   **Zeda Xu** *Co-advised with Chris McComb*

Mechanical Engineering, Carnegie Mellon University

2022–   **Alice Tang** *Co-advised with Daragh Byrne*
Human-Computer Interaction Institute, Carnegie Mellon University

2022–   **Howie Wang** Human-Computer Interaction Institute, Carnegie Mellon University

2021–   **Frederic Gmeiner** *Co-advised with Kenneth Holstein*
Human-Computer Interaction Institute, Carnegie Mellon University

2020–   **David Lin**
Human-Computer Interaction Institute, Carnegie Mellon University

THESIS COMMITTEE MEMBER

2023   **Jianzhe Gu**
Dissertation Title: *Computational Design of Morphing Looped Graph Structures*
Human-Computer Interaction Institute, Carnegie Mellon University

2023   **Humphrey Yang**
Dissertation Title: *Beyond Automation: Supporting Human-Computer Collaboration in Designing with Active Materials and Mechanisms*
Human-Computer Interaction Institute, Carnegie Mellon University

2022   **Karan Ahuja**
Dissertation Title: *Practical and High-Fidelity User Digitization On-the-Go*
Human-Computer Interaction Institute, Carnegie Mellon University

2021   **Mary Beth Kery**
Dissertation Title: *Designing Effective History Support for Exploratory Programming Data Work*
Human-Computer Interaction Institute, Carnegie Mellon University

PROFESSIONAL SERVICE

Conference Organizing Committee Roles

2024   **Theme Chair**
Halfway to the Future
Hybrid Knowing with Machines

2024   **Design Competition Chair**
International Symposium on Robot and Human Interactive Communication (RO-MAN)

2024   **Registration Chair**
ACM Conference on Automotive User Interfaces (AutoUI)

2023   **Program Committee Member**

ACM Conference on Human Factors in Computing Systems (CHI)
Understanding People Subcommittee

2023	**General Chair** ACM Conference on Designing Interactive Systems (DIS)
2022	**Video Chair** ACM Conference on Designing Interactive Systems (DIS)
2021	**Video Chair** ACM Conference on Designing Interactive Systems (DIS)
2021	**Program Committee Member** ACM Conference on Computer Supported Cooperative Work (CSCW)
2020	**Program Committee Member** ACM Conference on Human Factors in Computing Systems (CHI) *Understanding People Subcommittee*
2019	**Program Committee Member** ACM Conference on Human Factors in Computing Systems (CHI) *Design Subcommittee*
2019	**Program Committee Member** ACM/IEEE Conference on Human Robot Interaction (HRI)
2018	**Pioneers Workshop Panel Chair** ACM/IEEE Conference on Human Robot Interaction (HRI)
2016	**Assistant to the Conference Chair** ACM Conference on Human Factors in Computing Systems (CHI)
2015	**Student Volunteer Chair** ACM Conference on Tangible, Embedded, & Embodied Interaction (TEI)
2014	**Student Volunteer** ACM Conference on Tangible, Embedded, & Embodied Interaction (TEI)

REVIEWING SERVICE

ACM Conference in Human Factors in Computing (CHI)
ACM Conference on Computer Supported Collaborative Work (CSCW)
ACM Conference in Designing Interactive Systems (DIS)
ACM/IEEE Human-Robot Interaction Conference (HRI)
ACM Conference in Automotive User interfaces (AutoUI)
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)
Frontiers Robotics
Journal of Human-Computer Interaction

University Service

2024 **REU Admissions Committee**
Human-Computer Interaction Institute, Carnegie Mellon University

2023 **Ph.D. Admissions Committee**
Human-Computer Interaction Institute, Carnegie Mellon University

2021-2023 **Faculty Senate**
Human-Computer Interaction Institute, Carnegie Mellon University

2022 **MHCI Admissions Committee**
Human-Computer Interaction Institute, Carnegie Mellon University

2021 **Ph.D. Admissions Committee**
Human-Computer Interaction Institute, Carnegie Mellon University

2021 **MHCI Admissions Committee**
Human-Computer Interaction Institute, Carnegie Mellon University

2021 **Black Lives Matter Committee**
Human-Computer Interaction Institute, Carnegie Mellon University

2020–2022 **Design Studio Curriculum Task Force**
Human-Computer Interaction Institute, Carnegie Mellon University

2020 **MHCI Admissions Committee**
Human-Computer Interaction Institute, Carnegie Mellon University