

Chien-Ming Huang

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Last updated: March 3, 2026

Current Position

John C. Malone Associate Professor 2026–present
Department of Computer Science, Johns Hopkins University Baltimore, MD, USA
Core member of [Malone Center for Engineering in Healthcare](#), [Laboratory for Computational Sensing and Robotics](#),
[Institute for Assured Autonomy](#), [Data Science and AI Institute](#)

Prior Employment

John C. Malone Assistant Professor 2017–2025
Department of Computer Science, Johns Hopkins University Baltimore, MD, USA
Postdoctoral Associate 2015–2017
Department of Computer Science, Yale University New Haven, CT, USA
Research Intern 2013
Intelligent Robotics and Communication Laboratory, ATR International Kyoto, Japan
Research Assistant 2007–2008
Institute of Information Science, Academia Sinica Taipei, Taiwan

Education

Ph.D. in Computer Science 2010–2015
University of Wisconsin–Madison Madison, WI, USA
M.S. in Computer Science 2008–2010
Georgia Institute of Technology Atlanta, GA, USA
B.S. in Computer Science 2002–2006
National Chiao Tung University Hsinchu, Taiwan

Honors and Awards

John C. Malone Professorship 2017–present
Best paper award honorable mention, HRI'25 2025
[“See You Later, Alligator”: Impacts of Robot Small Talk on Task, Rapport, and Interaction Dynamics in Human-Robot Collaboration](#) | ACM/IEEE International Conference on Human-Robot Interaction (HRI)
Outstanding Article, Frontiers in Robotics and AI Editor's Picks 2022
[Evaluation of Socially-Aware Robot Navigation](#) | Frontiers in Robotics and AI
NSF CAREER Award 2022
Professor Joel Dean Excellence in Teaching Award 2020
Best paper award runner-up, RSS'13 (5/183) 2013
[Modeling and Evaluating Narrative Gestures for Humanlike Robots](#) | Robotics: Science and Systems (RSS)

Honors and Awards to My Students

Shiye Cao (CS PhD), HRI Pioneer	2026
Laura Fleig (CS PhD), Percy Pierre Fellowship	2025
Jiwon Moon (CS BS), CRA Outstanding Undergraduate Researcher Honorable Mention	2025
Victor Nikhil Antony (CS PhD), HRI Pioneer	2025
Maia Stiber (CS PhD), HRI Pioneer	2024
Gopika Ajaykumar (CS PhD), HRI Pioneer	2023
Shiye Cao (CS BS), CRA Outstanding Undergraduate Researcher Finalist	2022
Kaitlynn Pineda (CS PhD), JHU Computer Science Department Fellowship	2021
Fanjun (Frank) Bu (CS BS), CRA Outstanding Undergraduate Researcher Honorable Mention	2021
Amama Mahmood (CS PhD), JHU Computer Science Department Fellowship	2020
Gopika Ajaykumar (CS PhD), Inaugural Joint Nursing/Engineering Fellowship	2019
Maia Stiber (CS PhD), JHU Computer Science Department Fellowship	2019
Gopika Ajaykumar (CS PhD), NSF Graduate Research Fellowship	2018

Publications

All publications can be found on my [Google Scholar profile](#). Top-tier conferences (HRI, CHI, CSCW, IUI) have acceptance rates around 25% and are considered premier venues for Computer Science research. I also publish at top robotics conferences (ICRA, IROS, RSS). Below, I highlight students that I supervise directly ([my students](#)^(*)) and students that I mentor closely ([other PIs' students](#)^(†)). If papers are not open-access through the publishers, their preprint versions are available on [my group website](#).

Peer-Reviewed Journal Articles

- J.37 **Situated Understanding of Errors in Older Adults' Interactions with Voice Assistants: A Month-Long, In-Home Study**
[Amama Mahmood](#)^(*), [Junxiang Wang](#)^(*), and Chien-Ming Huang
ACM Transactions on Accessible Computing (2026)
<https://doi.org/10.1145/3796236>
- J.36 **Augmented Vision-Language Models: A Systematic Review**
[Antony Davis](#)^(*), Burhan Sadiq, Tianmin Shu, and Chien-Ming Huang
Transactions on Machine Learning Research (2026)
<https://doi.org/10.48550/arXiv.2507.22933>
- J.35 **Smart Glasses for Older Adults with Cognitive Impairment: A Scoping Review**
Brittany Burch, Jinwei Gu, Gail Betz, Chien-Ming Huang, Rachel McPherson, Alice Ryan, Barbara Resnick
Journal of the American Medical Directors Association (JAMDA) (2025)
Volume 26, Issue 11
<https://doi.org/10.1016/j.jamda.2025.105831>
- J.34 **Virtual Humans in Geriatric Care: An Integrative Review**
[Michael Joseph S Dino](#)^(†), Kenneth W Dion, Peter M Abadir, Chakra Budhathoki, Chien-Ming Huang, Joseph Carlo Vital, Jenica Ana Rivero, Ma Kristina Malacas, Rommel Hernandez, Patrick Tracy Balbin, Ladda Thi-amwong, Cheryl R Dennison Himmelfarb, Patricia M Davidson
The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences (2025)
Volume 80, Issue 9
<https://doi.org/10.1093/gerona/glaf145>
- J.33 **"Mango Mango, How to Let The Lettuce Dry Without A Spinner?": Exploring User Perceptions of Using An LLM-Based Conversational Assistant Toward Cooking Partner**
Szeyi Chan, Jiachen Li, Bingsheng Yao, [Amama Mahmood](#)^(*), Chien-Ming Huang, Holly Jimison, Elizabeth D. Mynatt, and Dakuo Wang

Proceedings of the ACM on Human-Computer Interaction (2025)
Volume 9, Issue 7, Article No. CSCW261, Pages 1–35
<https://doi.org/10.1145/3757442>

J.32 **Social Robots for Sleep Health: A Scoping Review**

Victor Antony^(*), Mengchi Li, Shu-Han Lin, Junxin Li, and Chien-Ming Huang
International Journal of Social Robotics (2025)
Volume 17, Pages 763–777
<https://doi.org/10.1007/s12369-025-01233-6>

J.31 **User Interaction Patterns and Breakdowns in Conversing with LLM-Powered Voice Assistants**

Amama Mahmood^(*), Junxiang Wang^(*), Bingsheng Yao, Dakuo Wang, and Chien-Ming Huang
International Journal of Human-Computer Studies (2025)
Volume 195
<https://doi.org/10.1016/j.ijhcs.2024.103406>

J.30 **What drives older adults' acceptance of virtual humans? A conjoint and latent class analysis on virtual exercise coach attributes for a community-based exercise program**

Michael Joseph Dino^(†), Kenneth W. Dion, Peter M. Abadir, Chakra Budhathoki, Chien-Ming Huang, William V. Padula, Irvin Ong, Cheryl R. Dennison Himmelfarb, Patricia M. Davidson, and Ladda Thiamwong
Computers in Human Behavior (2025)
Volume 164
<https://doi.org/10.1016/j.chb.2024.108507>

J.29 **Human-AI collaboration is not very collaborative yet: A taxonomy of interaction patterns in AI-assisted decision making from a systematic review**

Catalina Gomez Caballero^(*), Sue Min Cho^(†), Shichang Ke^(†), Chien-Ming Huang, and Mathias Unberath
Frontiers in Computer Science (Section: Human-Media Interaction) (2025)
Volume 6
<https://doi.org/10.3389/fcomp.2024.1521066>

J.28 **Care to Explain? AI Explanation Types Differentially Impact Physician Diagnostic Performance and Trust in AI**

Andrew Prinster^(*), Amama Mahmood^(*), Suchi Saria, Jean Jeudy, Cheng Ting Lin, Paul Yi, and Chien-Ming Huang
Radiology (2024)
Volume 313, Issue 2
<https://doi.org/10.1148/radiol.233261>

J.27 **How Large Language Model-Powered Conversational Agents Influence Decision Making in Domestic Medical Triage Contexts**

Catalina Gomez^(*), Junjie Yin, Chien-Ming Huang, and Mathias Unberath
Frontiers in Computer Science (Section: Human-Media Interaction) (2024)
Volume 6
<https://doi.org/10.3389/fcomp.2024.1427463>

J.26 **Mixed Reality Technology for Older Adults: Evaluating the Impact of a Novel Virtual Humanoid Coach in a Community-based Physical Exercise Program in the Philippines**

Michael Joseph Dino^(†), Kenneth Dion, Peter Abadir, Chakra Budhathoki, Chien-Ming Huang, Irvin Ong, Joseph Carlo Vital, Valerie Cotter, Cheryl Dennison Himmelfarb, and Patricia Davidson
Health Informatics Journal (2024)
Volume 30, Issue 3
<https://doi.org/10.1177/14604582241267793>

J.25 **Usability and Acceptance as Facilitators of Behavioral Intention to Use a Mixed Reality Exercise Program in Older Adults: A Structural Equation Model**

Michael Joseph Dino^(†), Kenneth Dion, Peter Abadir, Chakra Budhathoki, Chien-Ming Huang, Irvin Ong, Patrick Tracy Balbin, Cheryl Dennison Himmelfarb, and Patricia Davidson
Computers in Human Behavior: Artificial Humans (2024)
Volume 2, Issue 1
<https://doi.org/10.1016/j.chbah.2024.100071>

J.24 **ID.8: Co-Creating Visual Stories with Generative AI**

Victor Antony^(*) and Chien-Ming Huang
ACM Transactions on Interactive Intelligent Systems (2024)
Volume 14, Issue 3, Article 20, Pages 1–29
<https://doi.org/10.1145/3672277>
Invited to present at IUI'25 (unable to attend)

J.23 **The Impact of a Mixed Reality Technology-Driven Health Enhancing Physical Activity Program Among Community-Dwelling Older Adults: A Study Protocol**

Michael Joseph Dino^(†), Kenneth Dion, Peter Abadir, Chakra Budhathoki, Chien-Ming Huang, William Padula, Cheryl Dennison Himmelfarb, and Patricia Davidson
Frontiers in Public Health (Section: Aging and Public Health) (2024)
Volume 12
<https://doi.org/10.3389/fpubh.2024.1383407>

J.22 **Gender Biases in Error Mitigation by Voice Assistants**

Amama Mahmood^(*) and Chien-Ming Huang
Proceedings of the ACM on Human-Computer Interaction (2024)
Volume 8, Issue CSCW1, Article 60, Pages 1–27
<https://doi.org/10.1145/3637337>

J.21 **Designing for Appropriate Reliance: The Roles of AI Uncertainty Presentation, Initial User Decision, and User Demographics in AI-Assisted Decision-Making**

Shiye Cao^(*), Anqi Liu, and Chien-Ming Huang
Proceedings of the ACM on Human-Computer Interaction (2024)
Volume 8, Issue CSCW1, Article 41, pages 1–32
<https://doi.org/10.1145/3637318>

J.20 **Forging Productive Human-Robot Partnerships Through Task Training**

Maia Stiber^(*), Yuxiang Gao^(*), Russell H. Taylor, and Chien-Ming Huang
ACM Transactions on Human-Robot Interaction (2024)
Volume 13, Issue 1, Article 3, Pages 1–21
<https://doi.org/10.1145/3611657>
Invited to present at HRI'24

J.19 **Curricula for Teaching End-Users to Kinesthetically Program Collaborative Robots**

Gopika Ajaykumar^(*), Gregory Hager, and Chien-Ming Huang
PLOS ONE (2023)
<https://doi.org/10.1371/journal.pone.0294786>

J.18 **Older Adults' Expectations, Experiences, and Preferences in Programming Physical Robot Assistance**

Gopika Ajaykumar^(*), Kaitlynn Pineda^(*), and Chien-Ming Huang
International Journal of Human-Computer Studies (2023)
<https://doi.org/10.1016/j.ijhcs.2023.103127>

J.17 **How Time Pressure from Different Phases of Decision-Making Influences Human-AI Collaboration**

Shiye Cao^(*), Catalina Gomez^(*), and Chien-Ming Huang
Proceedings of the ACM on Human-Computer Interaction (2023)
Volume 7, Issue CSCW2, Article 277, Pages 1–26
<https://dl.acm.org/doi/10.1145/3610068>

- J.16 **Crowdsourcing Thumbnail Captions: Data Collection and Validation**
Carlos Aguirre^{(†)‡}, Shiye Cao^{(*)‡}, Amama Mahmood^(*), and Chien-Ming Huang
ACM Transactions on Interactive Intelligent Systems (2023)
Volume 13, Issue 3, Article 14, Pages 1–28
<https://doi.org/10.1145/3589346>
Invited article following the IUI'22 paper (C.18) | [‡]Equal contribution
- J.15 **Mitigating Knowledge Imbalance in AI-Advised Decision-Making Through Collaborative User Involvement**
Catalina Gomez^(*), Mathias Unberath, and Chien-Ming Huang
International Journal of Human-Computer Studies (2023)
<https://doi.org/10.1016/j.ijhcs.2022.102977>
- J.14 **The Relationship Between Older Adults' Technology Use, In-person Engagement, and Pandemic-related Mental Health**
Brittany F. Drazich^(†), Qiwei Li, Nancy Perrin, Sarah L. Szanton, Ji Won Lee, Chien-Ming Huang, Michelle C. Carlson, Laura Samuel, Natalie Regier, George Rebok, and Janiece L. Taylor
Aging & Mental Health (2023)
Volume 27, Issue 1, Pages 156–165
<https://doi.org/10.1080/13607863.2022.2046695>
- J.13 **Explainable Medical Imaging AI Needs Human-Centered Design: Guidelines and Evidence from a Systematic Review**
Haomin Chen^(†), Catalina Gomez^(*), Chien-Ming Huang, and Mathias Unberath
npj Digital Medicine (2022)
<https://doi.org/10.1038/s41746-022-00699-2>
- J.12 **Understanding User Reliance on AI in Assisted Decision-Making**
Shiye Cao^(*) and Chien-Ming Huang
Proceedings of the ACM on Human-Computer Interaction (2022)
Volume 6, Issue CSCW2, Article 471, Pages 1–23
<https://doi.org/10.1145/3555572> | [Talk](#)
- J.11 **Robotic Presence: The Effects of Anthropomorphism and Robot State on Task Performance and Emotion**
Lawrence H. Kim^(†), Veronika Domova, Yuqi Yao, Chien-Ming Huang, Sean Follmer, Pablo Paredes
IEEE Robotics and Automation Letters (RA-L) (2022)
Volume 7, Issue 3, Pages 7399–7406
<https://doi.org/10.1109/LRA.2022.3181726>
- J.10 **Evaluation of Socially-Aware Robot Navigation**
Yuxiang Gao^(*) and Chien-Ming Huang
Frontiers in Robotics and AI (Section: Human-Robot Interaction) (2021)
Volume 8
<https://doi.org/10.3389/frobt.2021.721317>
Invited article for the special topic of "Rising Stars in Human-Robot Interaction"
 *2022 Outstanding Article | Frontiers in Robotics and AI Editor's Picks*
- J.9 **Object Permanence Through Audio-Visual Representations**
Fanjun Bu^(*) and Chien-Ming Huang
IEEE Access (2021)
Volume 9, Pages 131574–131582
<https://doi.org/10.1109/ACCESS.2021.3115082> | [Demo](#) | [Dataset](#)
- J.8 **Designing User-Centric Programming Aids for Kinesthetic Teaching of Collaborative Robots**

Gopika Ajaykumar^(*), Maia Stiber^(*), and Chien-Ming Huang
Robotics and Autonomous Systems (2021)
Volume 145, Page 103845
<https://doi.org/10.1016/j.robot.2021.103845> | [Demo](#) | [Code](#)

J.7 A Survey on End-User Robot Programming

Gopika Ajaykumar^(*), Maureen Steele^(*), and Chien-Ming Huang
ACM Transactions on Computing Survey (2021)
Volume 54, Issue 8, Article 164, Pages 1–36
<https://doi.org/10.1145/3466819>

J.6 Editorial: Towards Real World Impacts: Design, Development, and Deployment of Social Robots in the Wild

Chung Hyuk Park, Raquel Ros, Sonya S. Kwak, Chien-Ming Huang, and Séverin Lemaïsan
Frontiers in Robotics and AI (Section: Human-Robot Interaction) (2020)
Volume 7
<https://doi.org/10.3389/frobt.2020.600830>

J.5 Toward Effective Robot–Child Tutoring: Intrinsic Motivation, Behavioral Intervention, and Learning Outcomes

Aditi Ramachandran^(†), Chien-Ming Huang, and Brian Scassellati
ACM Transactions on Interactive Intelligent Systems (2019)
Volume 9, Issue 1, Article 2, Pages 1–23
<https://doi.org/10.1145/3213768>
Invited to present at IUI'20 (canceled due to COVID-19)

J.4 Improving Social Skills in Children with ASD Using a Long-Term, In-Home Social Robot

Brian Scassellati, Laura Boccanfuso[‡], Chien-Ming Huang[‡], Marilena Mademtzi[‡], Meiyang Qin[‡], Nicole Salomons[‡], Pamela Ventola, and Frederick Shic
Science Robotics (2018)
Volume 3, Issue 21
<https://doi.org/10.1126/scirobotics.aat7544> | [‡]Equal contribution

J.3 Using Gaze Patterns to Predict Task Intent in Collaboration

Chien-Ming Huang, Sean Andrist, Allison Sauppé, and Bilge Mutlu
Frontiers in Psychology (Section: Cognitive Science) (2015)
Volume 6
<https://doi.org/10.3389/fpsyg.2015.01049>


J.2 Multivariate Evaluation of Interactive Robot Systems

Chien-Ming Huang and Bilge Mutlu
Autonomous Robots (2014)
Volume 37, Issue 4, Pages 335–349
<https://doi.org/10.1007/s10514-014-9415-y>
Invited article

J.1 The Repertoire of Robot Behavior: Enabling Robots to Achieve Interaction Goals through Social Behavior

Chien-Ming Huang and Bilge Mutlu
Journal of Human-Robot Interaction (Now *ACM Transactions on Human-Robot Interaction*) (2013)
Volume 2, Issue 2, Pages 80–102
<https://doi.org/10.5898/JHRI.2.2.Huang>

Peer-Reviewed Conference Full Papers

- C.40 **GUIDES: Guidance Using Instructor-Distilled Embeddings for Pre-Trained Robot Policy Enhancement**
Minquan Gao, Xinyi Li, [Qing Yan^{\(*\)}](#), Xiaojian Sun, Xiaopan Zhang, Chien-Ming Huang, and Jiachen Li
Proceedings of the 2026 IEEE International Conference on Robotics and Automation (ICRA) (2026)
Acceptance rate: 38%
- C.39 **Dynamic Compensation Can Enhance User Engagement by Triggering Sensitivity to Financial Losses in Crowd-sourced Studies**
[Catalina Gomez^{\(*\)}](#), Mung Yao Jia, Sue Min Cho, Chien-Ming Huang, and Mathias Unberath
Proceedings of 2026 ACM Conference on Human Factors in Computing Systems (CHI) (2026)
- C.38 **Reframing Conversational Design in HRI: Deliberate Design with AI Scaffolds**
[Shiye Cao^{\(*\)}](#), [Jiwon Moon^{\(*\)}](#), [Yifan Xu^{\(*\)}](#), Anqi Liue, and Chien-Ming Huang
Proceedings of 2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2026)
Acceptance rate: 23.2%
- C.37 **Plant-Inspired Robot Design Metaphors for Ambient HRI**
[Victor Nikhil Antony^{\(*\)}](#), Adithya R N, Sarah Derrick, Zhili Gong, Peter M Donley, and Chien-Ming Huang
Proceedings of 2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2026)
Acceptance rate: 23.2%
- C.36 **Lantern: A Minimalist Robotic Object Platform**
[Victor Nikhil Antony^{\(*\)}](#), [Zhili Gong^{\(*\)}](#), [Guanchen Li^{\(*\)}](#), [Clara Jeon^{\(*\)}](#), and Chien-Ming Huang
Proceedings of 2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2026)
Acceptance rate: 23.2%
- C.35 **ERR@HRI 2.0 Challenge: Multimodal Detection of Errors and Failures in Human-Robot Conversations**
[Shiye Cao^{\(*\)}](#), [Amama Mahmood^{\(*\)}](#), [Maia Stiber^{\(*\)}](#), Maria Teresa Parreira, Wendy Ju, Micol Spitale, Hatice Gunes, and Chien-Ming Huang
Proceedings of the 2025 ACM International Conference on Multimedia (MM) (2025)
<https://doi.org/10.1145/3746027.3762073>
- C.34 **Interruption Handling for Conversational Robots**
[Shiye Cao^{\(*\)}](#), [Jiwon Moon^{\(*\)}](#), [Amama Mahmood^{\(*\)}](#), [Victor Nikhil Antony^{\(*\)}](#), Ziang Xiao, Anqi Liu, and Chien-Ming Huang
Proceedings of the 2025 Robotics: Science and Systems Conference (RSS) (2025)
<https://doi.org/10.48550/arXiv.2501.01568> | Acceptance rate: 27.4%
- C.33 **Voice Assistants for Health Self-Management: Designing for and with Older Adults**
[Amama Mahmood^{\(*\)}](#), [Shiye Cao^{\(*\)}](#), [Maia Stiber^{\(*\)}](#), [Victor Nikhil Antony^{\(*\)}](#), and Chien-Ming Huang
Proceedings of 2025 ACM Conference on Human Factors in Computing Systems (CHI) (2025)
Article No. 511, Pages 1–22
<https://doi.org/10.1145/3706598.3713839> | Acceptance rate: 25.1%
- C.32 **“See You Later, Alligator”: Impacts of Robot Small Talk on Task, Rapport, and Interaction Dynamics in Human-Robot Collaboration**
[Kaitlynn Pineda^{\(*\)}](#), Ethan Brown, and Chien-Ming Huang
Proceedings of 2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2025)
<https://doi.org/10.1109/HRI61500.2025.10973942> | Acceptance rate: 25%
 **Best paper award honorable mention**
- C.31 **Xpress: Generating Dynamic, Context-Aware Robot Facial Expressions Using Language Models**
[Victor Nikhil Antony^{\(*\)}](#), [Maia Stiber^{\(*\)}](#), and Chien-Ming Huang
Proceedings of 2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2025)
<https://doi.org/10.1109/HRI61500.2025.10974045> Acceptance rate: 25%

- C.30 **The Design of On-Body Robots for Older Adults**
 Victor Nikhil Antony^(*), Clara Jeon, Jiasheng Li, Ge Gao, Huaishu Peng, Anastasia K. Ostrowski, and Chien-Ming Huang
Proceedings of 2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2025)
<https://doi.org/10.1109/HRI61500.2025.10973948> | Acceptance rate: 25%
- C.29 **ERR@HRI 2024 Challenge: Multimodal Detection of Errors and Failures in Human-Robot Interactions**
 Micol Spitale, Maria Teresa Parreira, Maia Stiber^(*), Minja Axelsson, Neval Kara, Garima Kankariya, Chien-Ming Huang, Malte Jung, Wendy Ju, and Hatice Gunes
Proceedings of the 26th International Conference on Multimodal Interaction (ICMI) (2024)
 Pages 652–656
<https://doi.org/10.1145/3678957.3689030>
- C.28 **Reducing Performance Variability and Overcoming Limited Spatial Ability: Targeted Training for Remote Robot Teleoperation**
 Tsung-Chi Lin^(*), Juo-Tung Chen^(*), and Chien-Ming Huang
Proceedings of 2024 IEEE/RJSJ International Conference on Intelligent Robots and Systems (IROS) (2024)
 Pages 13473–13478
<https://doi.org/10.1109/IROS58592.2024.10801973>
- C.27 **Alchemist: LLM-Aided End-User Development of Robot Applications**
 Ulas Berk Karli^(*), Juo-Tung Chen^(*), Victor Nikhil Antony^(*), and Chien-Ming Huang
Proceedings of 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2024)
 Pages 361–370
<https://doi.org/10.1145/3610977.3634969> | Acceptance rate: 24.9%
- C.26 **Active Engagement with Virtual Reality Reduces Stress and Increases Positive Emotions**
 Irene Kim^(†), Ehsan Azimi, Peter Kazanzides, and Chien-Ming Huang
Proceedings of 2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR) (2023)
<https://doi.org/10.1109/ISMAR59233.2023.00067> | Acceptance rate: 32%
- C.25 **Co-Designing with Older Adults, for Older Adults: Robots to Promote Physical Activity**
 Victor Nikhil Antony^{(*)†}, Sue Min Cho^{(†)‡}, and Chien-Ming Huang
Proceedings of 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2023)
 Pages 506–515
<https://doi.org/10.1145/3568162.3576995> | [‡]Equal contribution | Acceptance rate: 25.3%
- C.24 **“What If It Is Wrong”: Effects of Power Dynamics and Trust Repair Strategy on Trust and Compliance in HRI**
 Ulas Berk Karli^{(*)‡}, Shiye Cao^{(*)‡}, and Chien-Ming Huang
Proceedings of 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2023)
 Pages 271–280
<https://doi.org/10.1145/3568162.3576964> | [‡]Equal contribution | Acceptance rate: 25.3%
- C.23 **On Using Social Signals to Enable Flexible Error-Aware HRI**
 Maia Stiber^(*), Russell H. Taylor, and Chien-Ming Huang
Proceedings of 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2023)
 Pages 222–230
<https://doi.org/10.1145/3568162.3576990> | Acceptance rate: 25.3%
- C.22 **Effects of Rhetorical Strategies and Skin Tones on Agent Persuasiveness in Assisted Decision-Making**
 Amama Mahmood^(*) and Chien-Ming Huang
Proceedings of 2022 ACM International Conference on Intelligent Virtual Agents (IVA) (2022)
 Article 7, Pages 1–8
<https://doi.org/10.1145/3514197.3549628>

- C.21 **Modeling Human Response to Robot Errors for Timely Error Detection**
 Maia Stiber^(*), Russell H. Taylor, and Chien-Ming Huang
Proceedings of 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (2022)
 Pages 676–683
<https://doi.org/10.1109/IROS47612.2022.9981726> | Talk
- C.20 **Learning a Group-Aware Policy for Robot Navigation**
 Kapil Katyal[‡], Yuxiang Gao^{(*)‡}, Jared Markowitz, Sara Pohland, Corban Rivera, I-Jeng Wang, and Chien-Ming Huang
Proceedings of 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (2022)
 Pages 11328–11335
<https://doi.org/10.1109/IROS47612.2022.9981183> | [‡]Equal contribution
- C.19 **Owning Mistakes Sincerely: Strategies for Mitigating AI Errors**
 Amama Mahmood^(*), Jeanie Fung^(*), Isabel Won^(*), and Chien-Ming Huang
Proceedings of the 2022 ACM Conference on Human Factors in Computing Systems (CHI) (2022)
 Article 578, Pages 1–11
<https://doi.org/10.1145/3491102.3517565> | Acceptance rate: 24.7%
- C.18 **Crowdsourcing Thumbnail Captions Using Time-Constrained Methods**
 Carlos Aguirre^(†), Amama Mahmood^(*), and Chien-Ming Huang
Proceedings of the 2022 ACM International Conference on Intelligent User Interface (IUI) (2022)
 Pages 36–48
<https://doi.org/10.1145/3490099.3511136> | Acceptance rate: 24.5%
- C.17 **Structuring Human-Robot Interactions via Interaction Conventions**
 Ji Han^{(*)‡}, Gopika Ajaykumar^{(*)‡}, Ze Li^(*), and Chien-Ming Huang
Proceedings of the 29th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) (2020)
 Pages 341–348
<https://doi.org/10.1109/RO-MAN47096.2020.9223468> | [‡]Equal contribution | Talk
- C.16 **An Interactive Mixed Reality Platform for Bedside Surgical Procedures**
 Ehsan Azimi^(†), Zhiyuan Niu, Maia Stiber^(*), Nicholas Greene, Ruby Liu, Camilo Molina, Judy Huang, Chien-Ming Huang, and Peter Kazanzides
Proceedings of the 2020 Medical Image Computing and Computer Assisted Interventions (MICCAI) (2020)
 Pages 65–75
https://doi.org/10.1007/978-3-030-59716-0_7
- C.15 **Contextual Programming of Collaborative Robots**
 Chien-Ming Huang
Proceedings of the 2020 International Conference on Human-Computer Interaction (HCII) (Section: Artificial Intelligence in HCI) (2020)
 Pages 321–338
https://doi.org/10.1007/978-3-030-50334-5_22 | *Invited paper*
- C.14 **Prediction-Based Uncertainty Estimation for Adaptive Crowd Navigation**
 Kapil Katyal^(†), Katie Popek, Gregory Hager, I-Jeng Wang, and Chien-Ming Huang
Proceedings of the 2020 International Conference on Human-Computer Interaction (HCII) (Section: Artificial Intelligence in HCI) (2020)
 Pages 353–368
https://doi.org/10.1007/978-3-030-50334-5_24
- C.13 **Intent-Aware Pedestrian Prediction for Adaptive Crowd Navigation**
 Kapil Katyal^(†), Gregory Hager, and Chien-Ming Huang
Proceedings of the 2020 IEEE International Conference on Robotics and Automation (ICRA) (2020)

Pages 3277–3283
<https://doi.org/10.1109/ICRA40945.2020.9197434>

- C.12 See What I See: Enabling User-Centric Robotic Assistance Using First-Person Demonstrations**
Yeping Wang^(*), Gopika Ajaykumar^(*), and Chien-Ming Huang
Proceedings of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2020)
Pages 639–648
<https://doi.org/10.1145/3319502.3374820> | Acceptance rate: 24% | [Talk](#)
- C.11 PATI: A Projection-based Augmented Table-Top Interface for Robot Programming**
Yuxiang Gao^(*) and Chien-Ming Huang
Proceedings of the 2019 ACM International Conference on Intelligent User Interface (IUI) (2019)
Pages 345–355
<https://doi.org/10.1145/3301275.3302326> | Acceptance rate: 25% | [Talk](#) | [Code](#)
- C.10 Thinking Aloud with a Tutoring Robot to Enhance Learning**
Aditi Ramachandran^(†), Chien-Ming Huang, Edward Gartland, and Brian Scassellati
Proceedings of the 2018 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2018)
Pages 59–68
<https://doi.org/10.1145/3171221.3171250> | Acceptance rate: 23%
- C.9 Give Me a Break! Personalized Timing Strategies to Promote Learning in Robot-Child Tutoring**
Aditi Ramachandran^(†), Chien-Ming Huang, and Brian Scassellati
Proceedings of the 2017 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2017)
Pages 146–155
<https://doi.org/10.1145/2909824.3020209> | Acceptance rate: 24%
- C.8 Anticipatory Robot Control for Efficient Human-Robot Collaboration**
Chien-Ming Huang and Bilge Mutlu
Proceedings of the 2016 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2016)
Pages 83–90
<https://doi.org/10.1109/HRI.2016.7451737> | Acceptance rate: 25%
- C.7 Adaptive Coordination Strategies for Human-Robot Handovers**
Chien-Ming Huang, Maya Cakmak, and Bilge Mutlu
Proceedings of the 2015 Robotics: Science and Systems Conference (RSS) (2015)
<https://doi.org/10.15607/RSS.2015.XI.031> | Acceptance rate: 26%
Invited to present at AAAI'16 (Robotics special track)
- C.6 From 9 to 90: Engaging Learners of All Ages**
Allison Sauppé, Daniel Szafir, Chien-Ming Huang, and Bilge Mutlu
Proceedings of the 46th ACM Technical Symposium on Computer Science Education (SIGCSE) (2015)
Pages 575–580
<https://doi.org/10.1145/2676723.2677248> | Acceptance rate: 36%
- C.5 Modeling and Controlling Friendliness for an Interactive Museum Robot**
Chien-Ming Huang, Takamasa Iio, Satoru Satake, and Takayuki Kanda
Proceedings of the 2014 Robotics: Science and Systems Conference (RSS) (2014)
<https://doi.org/10.15607/RSS.2014.X.025> | Acceptance rate: 32%
- C.4 Learning-based Modeling of Multimodal Behaviors for Humanlike Robots**
Chien-Ming Huang and Bilge Mutlu
Proceedings of the 2014 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2014)
Pages 57–64
<https://doi.org/10.1145/2559636.2559668> | Acceptance rate: 24%

C.3 Modeling and Evaluating Narrative Gestures for Humanlike Robots

Chien-Ming Huang and Bilge Mutlu

Proceedings of the 2013 Robotics: Science and Systems Conference (RSS) (2013)

<https://doi.org/10.15607/RSS.2013.IX.026> | Acceptance rate: 30%

🏆 **Best paper award runner-up (5/183)**

C.2 Robot Behavior Toolkit: Generating Effective Social Behaviors for Robots

Chien-Ming Huang and Bilge Mutlu

Proceedings of the 2012 ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2012)

Pages 25–32

<https://doi.org/10.1145/2157689.2157694> | Acceptance rate: 25%

C.1 Effects of Responding to, Initiating and Ensuring Joint Attention in Human-Robot Interaction

Chien-Ming Huang and Andrea L. Thomaz

Proceedings of the 20th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) (2011)

Pages 65–71

<https://doi.org/10.1109/ROMAN.2011.6005230>

Refereed Symposium and Conference Short Papers

S.11 Demonstrating Plant-Inspired Robots for Ambient HRI

Victor Nikhil Antony^(*) and Chien-Ming Huang

Companion of the 2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI Demo) (2026)

S.10 Demonstrating Lantern and Its Variants: A Set of Minimal Robots

Victor Nikhil Antony^(*), Kai-Chieh Liang^(*), and Chien-Ming Huang

Companion of the 2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI Demo) (2026)

S.9 From Our Lab to Their Homes: Learnings from Longitudinal Field Research with Older Adults

Amama Mahmood^(*) and Chien-Ming Huang

2024 AAAI Fall Symposium on AI for Aging in Place (2024)

<https://doi.org/10.48550/arXiv.2409.15495>

S.8 Social Signal Modeling in Human-Robot Interaction

Maia Stiber^(*), Micol Spitale, Hatice Gunes, and Chien-Ming Huang

Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction (2024)

Pages 1358–1360

<https://doi.org/10.1145/3610978.3638163>

S.7 Forgetful Large Language Models: Lessons Learned from Using LLMs in Robot Programming

Juo-Tung Chen^(*) and Chien-Ming Huang

2023 AAAI Fall Symposium on Unifying Representations for Robot Application Development (2023)

<https://doi.org/10.1609/aaais.v2i1.27721>

S.6 Mental Synchronization in Human Task Demonstration: Implications for Robot Teaching and Learning

Julia Oppenheim^(*), Jindan Huang^(*), Isabel Won^(*), and Chien-Ming Huang

Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction (HRI LBR) (2021)

Pages 470–474

<https://doi.org/10.1145/3434074.3447216>

S.5 Not All Errors Are Created Equal: Exploring Human Responses to Robot Errors with Varying Severity

Maia Stiber^(*) and Chien-Ming Huang

Companion Publication of the 2020 International Conference on Multimodal Interaction (ICMI LBR) (2020)

Pages 97–101

<https://doi.org/10.1145/3395035.3425245> | [Talk](#)

S.4 User Needs and Design Opportunities in End-User Robot Programming

Gopika Ajaykumar^(*) and Chien-Ming Huang

Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (HRI LBR) (2020)

Pages 93–95

<https://doi.org/10.1145/3371382.3378300> | [Talk](#)

S.3 Establishing Sustained, Supportive Human-Robot Relationships: Building Blocks and Open Challenges

Sarah Strohkorb, Chien-Ming Huang, Aditi Ramachandran, and Brian Scassellati

2016 AAAI Spring Symposium on Enabling Computing Research in Socially Intelligent Human-Robot Interaction (2016)

[Paper](#)

S.2 Modeling Human-Robot Interactions as Systems of Distributed Cognition

Chien-Ming Huang and Bilge Mutlu

2014 AAAI Fall Symposium on Artificial Intelligence and Human-Robot Interaction (AI-HRI) (2014)

[Paper](#)

S.1 Joint Attention in Human-Robot Interaction

Chien-Ming Huang and Andrea L. Thomaz

2010 AAAI Fall Symposium on Dialog with Robots (2010)

[Paper](#)

Refereed Workshop Papers

W.13 Examining Barriers to Equitable Exosuit Use by Older Adults

Kai-Chieh Liang^(*), Victor Antony^(*), Junxin Li, Hao Su, and Chien-Ming Huang

2026 HRI Workshop on Equitable Robotics for Wellbeing (2026)

W.12 Practical Trade-offs in Generative Robot Expression Design

Victor Antony^(*), Shiye Cao^(*), and Chien-Ming Huang

2026 HRI Workshop on Expressive robot faces with Vizij (2026)

W.11 Designing Social Robots that Engage Older Adults in Exercise: A Case Study

Victor Antony^(*) and Chien-Ming Huang

2024 HRI Workshop on HRI for Aging in Place (2024)

<https://doi.org/10.48550/arXiv.2403.04153>

W.10 Eyes Are the Windows to AI Reliance: Towards Real-Time Human-AI Reliance Assessment

Shiye Cao^(*), Shichang Ke^(*)‡, Alexandra Mo^(*)‡, Anqi Liu, and Chien-Ming Huang

2023 CHI Workshop on Trust and Reliance in AI-Assisted Tasks (TRAIT) (2023)

[Paper](#) | ‡Equal contribution

W.9 Older Adults' Task Preferences for Robot Assistance in the Home

Gopika Ajaykumar^(*) and Chien-Ming Huang

2023 AAAI Workshop on User-Centric Artificial Intelligence for Assistance in At-Home Tasks (2023)

<https://doi.org/10.48550/arXiv.2302.12686>

W.8 Knowledge Imbalance in AI-Assisted Decision-Making: Collaborating with Non-Experts

Catalina Gomez^(*), Mathias Unberath, and Chien-Ming Huang

2021 NeurIPS workshop on Human-Centered AI (2021)

[Paper](#)

W.7 How Mock Model Training Enhances User Perceptions of AI Systems

Amama Mahmood^(*), Gopika Ajaykumar^(*), and Chien-Ming Huang

2021 NeurIPS workshop on Human-Centered AI (2021)

<https://doi.org/10.48550/arXiv.2111.08830>

W.6 Multimodal Robot Programming by Demonstration: A Preliminary Exploration

Gopika Ajaykumar^(*) and Chien-Ming Huang

2021 RSS Workshop on Accessibility of Robot Programming and the Work of the Future (2021)

<https://doi.org/10.48550/arXiv.2301.07189>

W.5 Don't be Rude! Learning Group-aware Policies for Robot Navigation

Yuxiang Gao^(*), Kapil Katyal, Jared Markowitz, I-Jeng Wang, and Chien-Ming Huang

2021 RSS Workshop on Social Robot Navigation (2021)

[Paper](#)

W.4 FACT: A Full-body Ad-hoc Collaboration Testbed for Modeling Complex Teamwork

Gopika Ajaykumar^(*), Annie Mao^(†), Jeremy Brown, and Chien-Ming Huang

2021 ICRA Workshop on Social Intelligence in Humans and Robots (2021)

<https://doi.org/10.48550/arXiv.2106.03290> | [Open testbed](#)

W.3 Interactive Training and Operation Ecosystem for Surgical Tasks in Mixed Reality

Ehsan Azimi^(†), Camilo Molina, Alexander Chang, Judy Huang, Chien-Ming Huang, and Peter Kazanzides

2018 MICCAI Workshop on OR 2.0 Context-Aware Operating Theaters (2018)

https://doi.org/10.1007/978-3-030-01201-4_3

W.2 Contextualizing the CSTA Recommendations Using Human-Robot Interaction

Allison Sauppé and Chien-Ming Huang

2015 HRI Workshop on HRI Education Workshop: How to design and teach courses in Human-Robot Interaction (2015)

[Paper](#)

W.1 Coordination Mechanisms in Human-Robot Collaboration

Bilge Mutlu, Allison Terrell, and Chien-Ming Huang

2013 HRI Workshop on Collaborative Manipulation (2013)

[Paper](#)

Conference Abstract

CA.1 Care To Explain? Differential Impacts Of Explanation Types On Physician Trust In AI

Andrew Prinster^(*), Amama Mahmood^(*), Suchi Saria, Jean Jeudy, Cheng Ting Lin, Paul Yi, and Chien-Ming Huang

2023 Conference on Machine Intelligence in Medical Imaging (Society for Imaging Informatics in Medicine)

Podium presentation

Doctoral Consortia

DC.3 Designing Effective Multimodal Behaviors for Robots: A Data-Driven Perspective

Chien-Ming Huang

Proceedings of the 15th ACM on Interaction Conference on Multimodal Interaction (ICMI) (2013)

Pages 329–332

<https://doi.org/10.1145/2522848.2532189>

DC.2 Designing Effective Behaviors for Educational Embodied Agents

Chien-Ming Huang

Extended Abstracts of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI) (2012)

Pages 931–934

<https://doi.org/10.1145/2212776.2212868> | Acceptance rate: 23%

DC.1 Generating Effective Social Behaviors for Robots

Chien-Ming Huang

Proceedings of the 2012 HRI Pioneers Workshop (2012)

[Paper](#) | Acceptance rate: 28%

Theses

T.2 **Human-Robot Joint Action: Coordinating Attention, Communication, and Actions**

Chien-Ming Huang
Department of Computer Sciences, University of Wisconsin–Madison (2015)
Doctor of Philosophy (Ph.D.) [Thesis](#)

T.1 **Joint Attention in Human-Robot Interaction**

Chien-Ming Huang
College of Computing, Georgia Institute of Technology (2010)
Master of Science (M.S.) [Thesis](#)

Patents

P.2 **Systems and Methods for Assessing Surgical Skill**

Shameema Sikder, Swaroop Vedula, Gregory Hager, Tae Soo Kim, and Chien-Ming Huang
Provisional. USA patent pending

P.1 **Affective Model Device and Method for Deciding the Behavior of an Affective Model Device**

Hyun-Ryong Jung, Jamee Kim Lee, Lilla Moshkina, Ronald Arkin, Sunghyun Park, and Chien-Ming Huang
USA patent US8458112 B2 (2013) [Link](#)

Research Funding

My research program is supported by NSF (CAREER, Future of Work, Human-Centered Computing), NIH (R01, P30), NIST, and highly selective internal competitions.

Ongoing Projects

OP.5 **Evaluation of AI Benefits for Informed AI Adoption at Scale**

Source: National Institute of Standards and Technology (NIST) 60NANB25D119
Investigators: Chien-Ming Huang (PI), Tinglong Dai, Michael Oberst
Period: 2025–2026
Amount: \$317,526

OP.4 **Leveraging AI and Wearables to Promote Physical Activity Behavior Change in Sedentary Older Adults: A Pilot Trial of a Robot-Supported Fitbit Intervention**

Source: Johns Hopkins Malone Center for Engineering in Healthcare
Investigator: Junxin Li (PI), Chien-Ming Huang (Co-PI)
Period: 2025–2027
Amount: \$50,000

OP.3 **HCC: Small: Modeling Ad Hoc Collaboration on Complex Manipulation Tasks for Human-Robot Teams** [\[Link\]](#)

Source: National Science Foundation (NSF) 2141335
Investigators: Chien-Ming Huang (PI), Gregory Hager (Former Co-PI)
Period: 2022–2026
Amount: \$499,373

OP.2 **CAREER: End-User Robot Programming by Multimodal Instruction** [\[Link\]](#)

Source: National Science Foundation (NSF) 2143704
Investigators: Chien-Ming Huang (PI)
Period: 2022–2027
Amount: \$599,990
Additional REU support: \$16,000

OP.1 Equipment Award – [Quori Robot](#)
Investigators: Chien-Ming Huang (PI), Gregory Hager, John Krakauer
Year: 2019

Completed Project

CP.10 **Improving Mobility for Dementia Alleviation in Older Adults via AI-Powered Affordable Exosuits** [\[Link\]](#)

Source: National Institute on Aging P30AG073104
Investigators: Chien-Ming Huang (PI), Hao Su (Co-PI), Junxin Li
Period: 2023–2025
Amount: \$264,841

CP.9 **Artificial Agent Ethics**

Source: Johns Hopkins University Institute for Assured Autonomy (IAA)
Investigators: Ariel Greenberg (PI), Chien-Ming Huang (Co-PI)
Period: 2023–2025
Amount: \$75,000

CP.8 **Artificial Intelligence Driven Tools for Objective Surgical Performance Improvement** [\[Link\]](#)

Source: National Institutes of Health (NIH) 1R01EY033065-01
Investigators: Shameema Sikder (PI), Swaroop Vedula, Gregory Hager, Chien-Ming Huang (Co-I)
Period: 2021–2025
Amount: \$1,840,000

CP.7 **FW-HTF: Human-Machine Teaming for Medical Decision Making** [\[Link\]](#)

Source: National Science Foundation (NSF) 1840088
Investigators: Suchi Saria (PI), Chien-Ming Huang (Co-PI), Martin Makary, William Padula, David Newman-Toker
Period: 2019–2024
Amount: \$1,500,000

CP.6 **In-Home Robot-Mediated Social Play for Children with ASD**

Source: Johns Hopkins Malone Center for Engineering in Healthcare
Investigator: Chien-Ming Huang (PI)
Period: 2022–2025
Amount: \$49,994

CP.5 **From Random to Deliberate Practice for Radiology: High-Fidelity Simulation with Artificial Intelligence-Generated Feedback** [\[Link\]](#)

Source: Johns Hopkins University Digital Education & Learning Technology Acceleration (DELTA)
Investigators: Francis Deng (PI), Jenny X. Chen, Paul Yi, Chien-Ming Huang (Co-I)
Period: 2023–2024
Amount: \$75,000

CP.4 **Robot-Assisted Learning and Teaching for Whole Child: An Exploration in Early Learning in Urban Communities** [\[Link\]](#)

Source: UMBC Sherman Center for Early Learning in Urban Communities
Investigators: Lujie Karen Chen (PI), Chien-Ming Huang (Co-I)
Period: 2022–2024
Amount: \$49,749

CP.3 **Extended Reality Training and Assessment System for Health Care** [\[Link\]](#)

Source: Johns Hopkins Engineering Center for Learning Design and Technology
Investigators: Ehsan Azimi (PI), Nassir Navab, Judy Huang, Chien-Ming Huang (Co-I)
Period: 2022–2023
Amount: \$15,000

CP.2 **Toward Human-Centered Assured Autonomy: Socially-Aware Robot Navigation in Human Environments** [\[Link\]](#)

Source: Johns Hopkins University Institute for Assured Autonomy (IAA)
Investigators: Chien-Ming Huang (PI, WSE), I-Jeng Wang (PI, APL)
Period: 2020–2022
Amount: \$677,763

CP.1 **Human-Robot Co-Navigation**

Source: JHU Applied Physics Laboratory (APL)
Investigator: Chien-Ming Huang (PI)
Period: 2019
Amount: \$30,000

Teaching

I created three new courses—*Introduction to Human-Computer Interaction*, *Human-Robot Interaction*, and *Accessible Computing*—at Johns Hopkins University. These courses have attracted students from diverse backgrounds including Computer Science, Robotics, Biomedical Engineering, Cognitive Science, Public Health, English, and others.

Course instruction

Instructor, **EN.601.490/690 Introduction to Human-Computer Interaction**

Department of Computer Science, Johns Hopkins University

Baltimore, MD, USA

Description. This course is designed to introduce undergraduate and graduate students to design techniques and practices in human-computer interaction (HCI), the study of interactions between humans and computing systems. Students will learn design techniques and evaluation methods, as well as current practices and exploratory approaches, in HCI through lectures, readings, and assignments. Students will practice various design techniques and evaluation methods through hands-on projects focusing on different computing technologies and application domains.

Overall quality: 3.77/5.00 (response=48, size=48)	Fall 2023
Overall quality: 4.61/5.00 (response=60, size=62)	Fall 2022
Overall quality: 4.54/5.00 (response=65, size=67)	Fall 2021
Overall quality: 4.44/5.00 (response=44, size=61)	Fall 2020
Overall quality: 4.19/5.00 (response=52, size=53)	Fall 2019
Overall quality: 4.39/5.00 (response=44, size=45)	Fall 2018

Select student feedback

... I'm writing this email because I have to tell you it's the course that taught me the most relevant material and the one I have applied to my actual work on a daily basis. (Fall 2018)

The material is a real refreshing change from other JHU CS courses, and it's presented by the professor who's best suited to teach it. Professor Huang is a master at communicating this stuff, and does it with ease and kindness. Fascinating, fascinating curriculum with tangible applications and a sense of ethic righteousness to it. Really really good stuff. (Fall 2019)

Super passionate professor and really interesting and relevant material. Dr. Huang adapts the course a lot to what is most relevant in the industry today with topics like design justice. This was a really great class. (Fall 2020)

The course is well-organized and topics build effectively on each other. The instructor does a nice job of teaching the material in an intuitive way and engaging with students. (Fall 2021)

The professor (is the best aspects of this course)! So kind and puts so much effort in, I wish all my professors were like him. (Fall 2022)

This is one of my favorite courses in Hopkins. The contents we learned in course is very applicable and useful. Also, I like the professor's teaching style that allow us to engage in class well. (Fall 2023)

Instructor, EN.601.491/691 Human-Robot Interaction

Department of Computer Science, Johns Hopkins University

Baltimore, MD, USA

Description. This course is designed to introduce advanced undergraduate and graduate students to research methods and topics in human-robot interaction (HRI), an emerging research area focusing on the design and evaluation of interactions between humans and robotic technologies. Students will 1) learn design principles for building and research methods of evaluating interactive robot systems through lectures, readings, and assignments; 2) read and discuss relevant literature to gain sufficient knowledge of various research topics in HRI; and 3) work on a substantial project that integrates the principles, methods, and knowledge learned in this course.

Overall quality: 4.53/5.00 (response=36, size=37)

Spring 2022

Overall quality: 4.50/5.00 (response=40, size=41)

Spring 2021

Overall quality: 4.65/5.00 (response=26, size=26)

Spring 2020

Overall quality: 4.70/5.00 (response=23, size=24)

Spring 2019

Overall quality: 4.19/5.00 (response=16, size=17)

Spring 2018

Select student feedback

Interesting course material, passionate professor, and great classroom environment. Professor really cared about how his students were doing, and paid special attention to their effectiveness in class as well as their stress levels and mental health. (Spring 2019)

This has been one of the greatest classes I've taken during my time at Hopkins. Thank you for being such an engaging, passionate, understanding, and knowledgeable professor. The care you had for us translated into us caring about the class more - I've never worked on a group project that every member doing as much as they did, and I know that was directly tied to the atmosphere you developed throughout the semester. (Spring 2020)

The professor is a really supportive and engaging leader and I always look forward to seeing him in class. He seems to care a lot about his students and has a lot of great knowledge about HRI! (Spring 2022)

Instructor, EN.601.493/693 Accessible Computing

Department of Computer Science, Johns Hopkins University

Baltimore, MD, USA

Description. This course is designed to introduce undergraduate and graduate students to the principles, challenges, and opportunities in designing computing systems that are accessible to people with diverse abilities. Students will learn about assistive technologies, inclusive design methodologies, and the incorporation of accessibility in computer applications through lectures, readings, and projects.

Overall quality: 4.39/5.00 (response=23, size=25)

Fall 2025

Select student feedback

This course really encouraged me to reflect deeply on accessibility in everyday design. I developed a much stronger understanding of accessibility features, and I now find myself paying more attention to whether the products around me are accessible. (Fall 2025)

Instructor, EN.601.105 CS First-year Experience

Department of Computer Science, Johns Hopkins University

Baltimore, MD, USA

Overall quality: 5.00/5.00 (response=6, size=7)

Fall 2021

Other teaching/mentoring impacts on students (JHU)

“Would you like to name a particular faculty or staff member who has made a positive difference in your experience at Johns Hopkins, and describe briefly how?” (Senior Survey)

Professor Huang's class in HCI is one of the best classes that I took. It was extremely well done and extremely interactive keeping everyone in the room engaged. I truly sparked my interest in the topic and led to me doing research in the field. I truly recognize that he has helped shape how I see design and how to make technology for all. (2020 Senior Survey)

Chien-Ming Huang impressed me with his deep care about his students which is often rare in more technical courses. He opened my mind to the possibilities in human computer interaction and made me passionate about this industry. (2020 Senior Survey)

Chien Ming Huang was an excellent professor in both Human Computer Interaction and Human Robot Interaction and opened my eyes to a great academic world focused on advancing the tie between humans and technology. (2020 Senior Survey)

Really great Professor with passion for research and teaching. Classes were a joy to be in and positively influenced my future career path. (2021 Senior Survey)

Always extremely encouraging of my skillset holistically and always extremely open to talk and listen to my academic concerns. (2022 Senior Survey)

Early teaching experience

Teaching Assistant, CS 302 Introduction to Programming Department of Computer Science, University of Wisconsin-Madison	Spring 2011 Madison, WI, USA
Teaching Assistant, CS 367 Introduction to Data Structures Department of Computer Science, University of Wisconsin-Madison	Fall 2010 Madison, WI, USA

Advising

My students have been awarded prestigious fellowships, including the NSF Graduate Research Fellowship, and have been recognized as HRI Pioneers—young researchers with the potential to shape the field of Human-Robot Interaction (HRI). Three of my undergraduate research students won the CRA Outstanding Undergraduate Researchers awards (2022 Finalist and 2021 & 2025 Honorable mention).

PhD Students

PhD.8 Laura Fleig (CS, JHU) Co-advisor: Mathias Unberath 🏆 Percy Pierre Fellowship	2025–present
PhD.7 Shiye Cao (CS, JHU) Research topic: <i>fast-paced human-robot conversation</i> Secondary advisor: Anqi Liu 🏆 2026 HRI Pioneers	2022–present
PhD.6 Kaitlynn Pineda (CS, JHU) Research topic: <i>social conversation in human-robot collaboration</i> 2021 Computer Science Department Fellowship	2021–present
PhD.5 Victor Nikhil Antony (CS, JHU) Research topic: <i>minimal robotic objects for well-being</i> 🏆 2025 HRI Pioneers	2021–present
PhD.4 Yuxiang Gao (CS, JHU) Department of Computer Science, Johns Hopkins University On leave: since 2022	2019–present

PhD.3 Amama Mahmood (CS, JHU)	2020–2025
Thesis: <i>Designing Conversation Experience: From Traditional to LLM-Powered Voice Assistants</i>	
Next: John C. Malone Postdoctoral fellow	
🏆 John C. Malone Postdoctoral Fellowship	
2020 Computer Science Department Fellowship	
PhD.2 Maia Stiber (CS, JHU)	2019–2024
Thesis: <i>Social Signals for Interactive, Error Aware Robotic Systems</i>	
Secondary advisor: Russ Taylor	
Next: Microsoft Research	
🏆 2024 HRI Pioneers	
2019 Computer Science Department Fellowship	
PhD.1 Gopika Ajaykumar (CS, JHU)	2018–2023
Thesis: <i>Supporting End-Users in Programming Robot Motions</i>	
Next: Southwest Research Institute	
🏆 2023 HRI Pioneers	
2019 JHU Joint Nursing/Engineering Fellowship	
🏆 NSF Graduate Research Fellowship	

Postdoctoral Fellow

PDc.3 Amama Mahmood (JHU)	2025–present
Co-mentored by Paul Yi and Ziang Xiao	
🏆 John C. Malone Postdoctoral Fellowship	
PDc.2 Jie Gao (JHU)	2025–present
Co-mentored by Ziang Xiao and Mark Dredze	
🏆 John C. Malone Postdoctoral Fellowship	
PDc.1 Tsung-Chi Lin (JHU)	2023–2025
Next: New Jersey Institute of Technology	
🏆 John C. Malone Postdoctoral Fellowship	

DEng (Doctor of Engineering) Students

Anthony Davis (JHU APL)	2024–present
Secondary advisor: Tianmin Shu	
Barton Paulhamus (JHU APL)	2018–2021
Thesis: <i>Integrating Usability with Task Performance for Shared Autonomy</i>	
Next: APL Intelligent Systems Center	

Master's Students (Research/Project)

Yifan Xu (CS)	2025–present
Kai-Chieh Liang (Robotics)	2025–present
Yichen Xie (Robotics)	2024–2025
Xiaowen Lin (CS)	2024–2025
Zhili Gong (ME, Next: ME PhD at Rice University)	2024–2025
Juo-Tung Chen (Robotics, Next: ME PhD at Johns Hopkins University)	2023–2024
Ulas Berk Karli (Robotics, Next: CS PhD at Yale University)	2021–2023
Yeping Wang (Robotics, Next: CS PhD at the University of Wisconsin–Madison)	2019–2020
Jindan Huang (CS, Next: CS PhD at Tufts University)	2019–2020
Amama Mahmood (Robotics, Next: CS PhD at Johns Hopkins University)	2019–2020
Xingli Han (CS, Next: Robotics PhD at Worcester Polytechnic Institute)	2019
Amrita Krishnaraj (Robotics, Next: Van Robotics)	2018–2019

Ji Han (Robotics, Next: Tusimple)	2018
Yuxiang Gao (Robotics, Next: CS PhD at Johns Hopkins University)	2018
Xin Ren (Robotics, Next: Pony.ai)	2018

Undergraduate Students (Research/Project)

Bokyung (Nadia) Kim (CS)	2023–present
Sarah Derrick (ME)	2025
William Song (CS)	2025
Jiwon Moon (CS, Next: CS PhD at the University of Chicago)	2023–2025
🏆 2025 CRA Outstanding Undergraduate Researcher Honorable Mention	
Junxiang (Jim) Wang (ME, Next: Robotics PhD at Carnegie Mellon University)	2022–2023
Chinat Yu (CS, Next: Graduate Study at Stanford University)	2022–2023
Senior Honors Thesis: <i>Enhancing Laboratory Science Education through Quest2Learn: An Augmented Reality Application for Online and On-Campus Learning</i>	
Jeanie Fung (CogSci)	2021–2022
Shiye Cao (CS, Next: CS PhD at Johns Hopkins University)	2021–2022
🏆 2022 CRA Outstanding Undergraduate Researcher Finalist	
Isabel Won (CogSci)	2020–2021
Fanjun (Frank) Bu (CS, Next: CS PhD at Cornell Tech)	2020–2021
🏆 2021 CRA Outstanding Undergraduate Researcher Honorable Mention	
Julia Oppenheim (CS, CogSci, Next: MongoDB)	2019–2020

High School Students (Project)

Ximing Luo	2022
Katherine Sun	2022
Yoojin Lim	2019
Ge (Candy) Shi	2019

Visiting Scholars

Maram Sakr (University of British Columbia), advised by Elizabeth Croft and Machiel Van der Loos	2022
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PhD Thesis Committee

Abhijat Biswas (Robotics, CMU), advised by Henny Admoni Thesis: <i>Eye Gaze for Intelligent Driving</i>	2024
Jaron Lee (CS, JHU), advised by Ilya Shpitser Thesis: <i>Methods for Causal Inference Using Experimental and Observational Data</i>	2024
Michael Joseph Dino (Nursing, JHU), advised by Patricia Davidson Thesis: <i>Understanding the Impact of Humanoid Technology (HT) Driven Health-Enhancing Physical Activity (HEPA) Program Among Community-Dwelling Filipino Older Adults</i>	2024
Mengchi Li (Nursing, JHU), advised by Junxin Li and Sarah Szanton Thesis: <i>Wearable Activity Tracker Use And Physical Activity in Older Adults: Before and During the COVID-19 Pandemic</i>	2023
Haomin Chen (CS, JHU), advised by Mathias Unberath and Greg Hager Thesis: <i>Towards Interpretable Machine Learning for Medical Image Analysis</i>	2022
Mohit Singhala (ME, JHU), advised by Jeremy Brown Thesis: <i>Understanding Human Haptic Perception in Telerobotic Systems</i>	2022
Byeol Star Kim (ME, JHU), advised by Axel Krieger Thesis: <i>Advances in Diagnosis and Surgery of Congenital Heart Disease Through Novel Virtual Reality Systems for Design, Simulation, and Planning Methods</i>	2021

Brittany Drazich (Nursing, JHU), advised by Janiece Taylor and Sarah Szanton Thesis: <i>Technology Use and the Mental Health and Well-being of Older Adults</i>	2021
Kapil Katyal (CS, JHU), advised by Greg Hager Thesis: <i>Integrating Perception, Prediction and Control for Adaptive Mobile Navigation</i>	2021
Ehsan Azimi (CS, JHU), advised by Peter Kazanzides and Russ Taylor Thesis: <i>Interactive Platform for Medical Procedures in Mixed Reality</i>	2020

Broadening Participation in Computing

I have had numerous opportunities to mentor students from diverse backgrounds to pursue careers in science and technology.

Mentor for the Inclusion@RSS workshop Mentee: Arsha Ali (University of Michigan, Ann Arbor)	2022
Present at the Introduction to Computing Research (ICR) virtual workshop Introducing human-centered robotics to undergraduate students seeking to explore computing research	2021
Host local high school women for STEM research experience	2019–2022
Mentor for the Meyerhoff Scholars Program	2019
My group presents our research to Girl Scouts at Maryland Science Center	2019

Selected Outreach

Research showcase and outreach, Augsburg senior living community, Baltimore, MD, USA	2024
Girl scouts robotics workshop, Maryland Science Center, Baltimore, MD, USA	2019
WISE STEM mentor program for high school women, Baltimore, MD, USA	2019
JHU WSE Dean's Alumni Networking Brunch in New York City, NY, USA	2019
JHU WSE Alumni Week Engagement, Baltimore, MD, USA	2019
Social Robotics Summer Program, Grandparents University, Madison, WI, USA	2014

Invited Talks

Designing Educational Robots for the Future of Learning School of Education, Shanghai Jiao Tong University Vietnam-Korea University of Information and Communication Technology	2025 2025
Learning with Robots Sarah D. Barder conference, JHU Center for Talented Youth (CTY) <i>Keynote Speaker</i>	2025
Becoming Teammates: Designing Assistive, Collaborative Machines Robotics Colloquium, University of Michigan Robotics Colloquium, University of California San Diego Robotics Colloquium, Massachusetts Institute of Technology CS Colloquium, University of Southern California Human-Computer Interaction Lab (HCIL), University of Maryland, College Park Robotics Institute Colloquium, Carnegie Mellon University Robotics Colloquium, University of Washington Center for Language and Speech Processing (CLSP), Johns Hopkins University	2024 2024 2024 2024 2024 2023 2023 2023
Human-Robot Collaboration in Healthcare AI and Healthcare seminar, Hopkins Business of Health Initiative	2024

Designing Assistive Robots to Promote Physical Activity for Older Adults	
Annual Johns Hopkins Research Symposium on Engineering in Healthcare	2023
Robot Application Development: From Program Specification to Collaboration with AI	
AAAI Fall Symposium on Unifying Representations for Robot Application Development	2023
<i>Keynote Speaker</i>	
Low Technology Adoption by Older Adults: Now What?	
IROS Workshop on Geriatrics: AI and Robotics for Health & Well-Being in Older Age	2023
Modeling Human Behavior to Enhance Human-AI Teaming	
Human, Artificial Intelligence, and Robot Teaming Technical Group (HART TG), Human Factors and Ergonomics Society (HFES)	2022
Modeling Human Behavior for Human-Robot Systems	
Human-Robot Interaction for Learning Robots Workshop, Google	2022
<i>Keynote Speaker</i>	
Human-Centered Robot Autonomy	
Department of Engineering System and Environment, University of Virginia	2022
Robots as Partners in the Future of Work, Care, and Learning	
Center for Human-Computer Interaction, Virginia Tech	2021
Modeling, Learning, and Teaching Social Skills	
ICSR Workshop on Social AI for Human-Robot Interaction of Human-Care Robots	2021
Human Subjects Experiments in Robotics Research	
Laboratory for Computational Sensing and Robotics, Johns Hopkins University	2021
Joint presentation with Jeremy Brown	
How might older adults be supported by social robots?	
Center for Innovative Care in Aging, Johns Hopkins School of Nursing	2021
Integrating Robots into the Future of Work	
FORW-RD NSF Research Traineeship (NRT) Program, Worcester Polytechnic Institute	2020
<i>Keynote Speaker</i>	
Socially Assistive Robots for Autism Research	
Center for Neurodevelopmental and Imaging Research, Kennedy Krieger Institute	2018
Empowering People Using Socially Intuitive Robots	
Intelligent Systems Center Seminar, Applied Physics Laboratory	2017
Designing Intuitive Interactions for Human-Robot Teams	
Southwest Texas Asian Symposium, University of Texas Rio Grande Valley	2017
Laboratory for Computational Sensing and Robotics, Johns Hopkins University	2017
Building Socially Cooperative Human-Robot Teams	
Department of Computer Science, Johns Hopkins University	2017
Department of Computer Science, University of South Carolina	2017
Department of Computer Science, University of North Carolina at Charlotte	2017
Department of Computer Science, University of Illinois at Urbana-Champaign	2017
School of Computing, Clemson University	2017
Designing Interactive Robots for Everyday People	
Department of Computer Science, University of North Carolina at Chapel Hill	2016
Adaptive Coordination Strategies for Human-Robot Handovers	
<i>Invited RSS Early Career Spotlight Talk at AAAI'16</i>	2016

Designing Robotic Systems to Assist Everyday Users

Microsoft Research

Department of Computer Science, University of Minnesota, Twin Cities

2015

2015

Community Service & Leadership

I actively serve the HRI, HCI, and Robotics communities. I have organized workshops/challenges at leading conferences. I am an Associate Editor for the ACM Transactions on Human-Robot Interaction and regularly serve on the program committee for the HRI conference. I also help build the HCI and multidisciplinary design community at Johns Hopkins University.

Organization Service for Conferences & Workshops

Organizer, Multimedia Challenge: Multimodal Detection of Errors and Failures in Human-Robot Conversations	2025
Organizer, ICMI Challenge: Multimodal Detection of Errors and Failures in Human-Robot Interactions	2024
Organizer, HRI Workshop on Social Signal Modeling in Human-Robot Interaction	2024
Organizer, RO-MAN special session on Bridging HRI in Academia and Industry	2023
Organizer, AAAI Spring Symposium on Bridging HRI in Academia and Industry	2023
Organizer, RSS Workshop on Close-Proximity Human-Robot Collaboration	2022
Registration Chair, ACM HRI Conference	2018
Organizer, RSS Workshop on Towards a framework for Joint Action	2018
Organizer, IROS Workshop on Synergies between Learning and Interaction	2017
Organizer, RSS Workshop on Socially and Physically Assistive Robotics for Humanity	2016
Organizer, RO-MAN Workshop on Long-Term Child-Robot Interaction	2016

Editorial Service

Special Issue Editor, ACM Transactions on Human-Robot Interaction <i>Understanding, Detecting and Repairing Errors and Failures in Human-Robot Interactions</i>	2025–present
Associate Editor ACM Transactions on Human-Robot Interaction	2018–present
Special Topic Editor, Frontiers in Robotics and AI <i>Towards Real World Impacts: Design, Development, and Deployment of Social Robots in the Wild</i>	2018–2019

Funding Agency Referee

Panelist, National Science Foundation (NSF)	2020, 2021, 2023
Ad-hoc external reviewer, National Science Foundation (NSF)	2019

Program Committee

International Conference on Human-Robot Interaction (HRI) (AC)	2018, 2019, 2021, 2022, 2024
International Conference on Human Factors in Computing Systems (CHI) (AC)	2019
International Conference on Robotics and Automation (ICRA) (AE for HRI)	2024
AAAI Conference on Artificial Intelligence (AAAI)	2017, 2018
International Symposium on Robot and Human Interactive Communication (RO-MAN)	2016
International Conference on Human-Agent Interaction (HAI)	2014, 2016
International Conference on Social Robotics (ICSR)	2016
International Conference on Biomedical Robotics and Biomechatronics (BioRob)	2020

Conference Paper Referee

International Conference on Human-Robot Interaction (HRI)	2012–2017, 2020, 2023
International Conference on Human Factors in Computing Systems (CHI)	2012, 2016, 2017
Robotics: Science and Systems (RSS)	2021
International Conference on Robotics and Automation (ICRA)	2017, 2019, 2020
International Conference on Intelligent Robots and Systems (IROS)	2014, 2017, 2021, 2022

International Symposium on Robotics Research (ISRR)	2017
International Symposium on Robot and Human Interactive Communication (RO-MAN)	2013–2015, 2017
International Conference on Humanoid Robots	2014
International Conference on Multimodal Interaction (ICMI)	2012
International conference on Tangible, Embedded and Embodied Interaction (TEI)	2016
IEEE Conference on Virtual Reality and 3D User Interfaces (VR)	2018
International Symposium on Experimental Robotics (ISER)	2018

Journal Article Referee

ACM Transactions on Human-Robot Interaction (THRI)
 International Journal of Robotics Research (IJRR)
 International Journal of Social Robotics
 Pattern Recognition Letters
 Interaction Studies
 International Journal of Human-Computer Interaction
 IEEE Transactions on Affective Computing
 IEEE Transactions on Human-Machine Systems
 IEEE Transactions on Autonomous Mental Development
 IEEE Robotics and Automation Letters (RA-L)
 Journal of Intelligent and Robotic Systems
 International Journal of Developmental Disabilities
 Cognitive Systems Research
 Robotica
 Frontiers in Robotics and AI
 British Journal of Educational Technology

University Service

Department of Computer Science, Johns Hopkins University

WSE Faculty Senate CS Representative	2021–2023
HCI Initiative	2019–present
Faculty Search Committee	2018, 2019
Student Awards Committee	2017–2023

Malone Center for Engineering in Healthcare, Johns Hopkins University

Annual Malone Symposium Co-Chair	2025
Malone Postdoc Fellow Selection Committee	2023, 2025

Laboratory for Computational Sensing and Robotics, Johns Hopkins University

Robotics MSE Admission Committee	2022
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Whiting School of Engineering, Johns Hopkins University

Data Science and Artificial Intelligence (DSAI) Institute Dry-lab Space Committee	2023
Multidisciplinary Design Faculty Search Committee	2020
Multidisciplinary Design Initiative Faculty Advisor	2018–2021
IAA Workshop Technical Committee	2019
Design Day Planning Committee	2019

Johns Hopkins University

Alpha Phi Omega (APO) Academic Advisor	2018
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Selected Press

Talking robots learn to manage human interruptions (JHU Hub)	2025
Alexa, should voice assistants have a gender? (JHU Hub)	2025
Robot programming for everyday people (JHU Hub)	2021
Plays well with humans (JHU Magazine)	2019

Robots are becoming classroom tutors. But will they make the grade? (Science News)	2019
UW professor develops robotic dishwashing arm (The Badger Herald)	2015
A new robot helper could make daily chores astronomically more fun (Tech Insider)	2015
Teach Your Robot to Do the Dishes (MIT Technology Review)	2015
Nao Robot Serves 'Sushi' (AZoRobotics)	2014
Bridging the uncanny valley between humans, robots (UW-Madison News)	2014
Developing Robots That Can Teach Humans (Science Nation)	2012