Chien-Ming Huang

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Current Position

John C. Malone Assistant Professorship — 2018–present
Assistant Professor — 2017–present
Department of Computer Science, Johns Hopkins University — Baltimore, MD, USA

Core faculty member of Malone Center for Engineering in Healthcare, Laboratory for Computational Sensing and Robotics, Institute for Assured Autonomy, Data Science and AI Institute

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

Prior Employment

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

Honors and Awards

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
John C. Malone Assistant Professorship — 2018
CHI Early Career Symposium — 2018

Best paper award runner-up, RSS'13 (5/183) 2013
Modeling and Evaluating Narrative Gestures for Humanlike Robots | Robotics: Science and Systems (RSS)

Best student poster runner-up, Robotics: Science and Systems (RSS) 2013
HRI Pioneer (Acceptance rate: 28%) 2012
CHI Doctoral Consortium (Acceptance rate: 23%) 2012

Honors and Awards to My Students

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.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 (CSCW)
https://doi.org/10.48550/arXiv.2310.05853

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)
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) (2024)
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 Lemaisnan
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‡, Meiying 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.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)
https://doi.org/10.48550/arXiv.2409.15488 | 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://arxiv.org/pdf/2501.13233 | 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)
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://arxiv.org/pdf/2502.02725 | 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/RSJ 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.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/aaaiss.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.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 the NSF (CAREER, Future of Work, Human-Centered Computing), the NIH (R01, P30), and highly selective internal competitions.

Ongoing Projects

OP.6 **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: 2023–2026
Amount: $264,841

OP.5 **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

OP.4 **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.3 **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.2 **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

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

Completed Project

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 two new courses—*Introduction to Human-Computer Interaction* and *Human-Robot Interaction*—at the Johns Hopkins University. These two courses have engaged students from a wide range of backgrounds including Computer Science, Robotics, Biomedical Engineering, Cognitive Science, Public Health, English, and more.

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 knowledgable 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.601.105 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** — Spring 2011
Department of Computer Science, University of Wisconsin–Madison — Madison, WI, USA

Teaching Assistant, **CS 367 Introduction to Data Structures** — Fall 2010
Department of Computer Science, University of Wisconsin–Madison — Madison, WI, USA

Advising

My students have received prestigious fellowships including NSF Graduate Research Fellowship and highly selective departmental fellowship. Three of my undergraduate research students won the CRA Outstanding Undergraduate Researchers awards (2022 Finalist and 2021 & 2025 Honorable mention).

PhD Students

PhD.7 **Shiye Cao** (CS, JHU) 2022–present
Research topic: *human-robot conversation*
Secondary advisor: Anqi Liu

PhD.6 **Kaitlynn Pineda** (CS, JHU) 2021–present
Research topic: *social conversation in human-robot collaboration*
2021 Computer Science Department Fellowship

PhD.5 **Victor Nikhil Antony** (CS, JHU) 2021–present
Research topic: *minimal robotic objects for well-being*
2025 HRI Pioneers

PhD.4 **Yuxiang Gao** (CS, JHU) 2019–present
On leave: since 2022

PhD.3 **Amama Mahmood** (CS, JHU) 2020–2025
Thesis: *Designing Conversation Experience: From Traditional to LLM-Powered Voice Assistants*
2020 Computer Science Department Fellowship

PhD.2 **Maia Stiber** (CS, JHU) 2019–2024
Thesis: *Social Signals for Interactive, Error Aware Robotic Systems*
Secondary advisor: Russ Taylor
Next: Microsoft Research
2024 HRI Pioneers
2019 Computer Science Department Fellowship

PhD.1 **Gopika Ajaykumar** (CS, JHU) 2018–2023
Thesis: *Supporting End-Users in Programming Robot Motions*
Next: Southwest Research Institute
2023 HRI Pioneers
2019 JHU Joint Nursing/Engineering Fellowship
2018 NSF Graduate Research Fellowship

Postdoctoral Fellow

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–present
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: *Integrating Usability with Task Performance for Shared Autonomy*
Next: APL Intelligent Systems Center

Master's Students (Research/Project)

Yichen Xie (Robotics) 2024–present
Xiaowen Lin (CS) 2024–present
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)

Nadia Kim (CS) 2023–present
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: *Enhancing Laboratory Science Education through Quest2Learn: An Augmented Reality Application for Online and On-Campus Learning*

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

PhD Thesis Committee

Abhijat Biswas (Robotics, CMU), advised by Henny Admoni 2024
Thesis: *Eye Gaze for Intelligent Driving*

Jaron Lee (CS, JHU), advised by Ilya Shpitser 2024
Thesis: *Methods for Causal Inference Using Experimental and Observational Data*

Michael Joseph Dino (Nursing, JHU), advised by Patricia Davidson 2024
Thesis: *Understanding the Impact of Humanoid Technology (HT) Driven Health-Enhancing Physical Activity (HEPA) Program Among Community-Dwelling Filipino Older Adults*

Mengchi Li (Nursing, JHU), advised by Junxin Li and Sarah Szanton 2023
Thesis: *Wearable Activity Tracker Use And Physical Activity in Older Adults: Before and During the COVID-19 Pandemic*

Haomin Chen (CS, JHU), advised by Mathias Unberath and Greg Hager 2022
Thesis: *Towards Interpretable Machine Learning for Medical Image Analaysis*

Mohit Singhala (ME, JHU), advised by Jeremy Brown 2022
Thesis: *Understanding Human Haptic Perception in Telerobotic Systems*

Byeol Star Kim (ME, JHU), advised by Axel Krieger 2021
Thesis: *Advances in Diagnosis and Surgery of Congenital Heart Disease Through Novel Virtual Reality Systems for Design, Simulation, and Planning Methods*

Brittany Drazich (Nursing, JHU), advised by Janiece Taylor and Sarah Szanton 2021
Thesis: *Technology Use and the Mental Health and Well-being of Older Adults*

Kapil Katyal (CS, JHU), advised by Greg Hager 2021
Thesis: *Integrating Perception, Prediction and Control for Adaptive Mobile Navigation*

Ehsan Azimi (CS, JHU), advised by Peter Kazanzides and Russ Taylor 2020
Thesis: *Interactive Platform for Medical Procedures in Mixed Reality*

JHU Graduate Board Oral (GBO) Exam Committee

Nathon Drenkow (CS, 2023), Michael Joseph Dino (Nursing, 2022), Sergio Machaca (ME, 2022), Dayeon Kim (CS, 2022), Carlos Aguirre (CS,2022), Jaron Lee (CS, 2022), Ranjani Srinivasan (ECE, 2021), Haomin Chen (CS, 2021), Noam Finkelestein (CS, 2020), Brittany Drazich (Nursing, 2020), Mohit Singhala (ME, 2020), Gaungyu Yang (CS, 2019), Ehsan Azimi (CS, 2018), Kapil Katyal (CS, 2018)

JHU PhD Student Qualifying Research Projects

Dayeon Kim (CS, 2023), Catalina Gomez (CS, 2021), Jaron Lee (CS, 2020), Carlos Aguirre (CS, 2020)

Summer Interns

Junlin Wu (Wuhan University, China) 2018
Ze Li (Tsinghua University, China), Next: CS MS at New York University) 2018
Yuxn Xu (Peking University, China, Next: CS MS at Columbia University) 2018

Diversity, Equity, and Inclusion

I have had various opportunities to mentor and encourage underrepresented students to pursue careers in science and technology.

Mentor for the Inclusion@RSS workshop 2022
Mentee: Arsha Ali (University of Michigan, Ann Arbor)

Present at the Introduction to Computing Research (ICR) virtual workshop 2021
Introducing human-centered robotics to undergraduate students seeking to explore computing research

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

Learning with Robots
Sarah D. Barder conference, JHU Center for Talented Youth (CTY) 2025
Keynote Speaker

Becoming Teammates: Designing Assistive, Collaborative Machines
Robotics Colloquium, University of Michigan 2024
Robotics Colloquium, University of California San Diego 2024
Robotics Colloquium, Massachusetts Institute of Technology 2024
CS Colloquium, University of Southern California 2024
Human-Computer Interaction Lab (HCIL), University of Maryland, College Park 2024
Robotics Institute Colloquium, Carnegie Mellon University 2023
Robotics Colloquium, University of Washington 2023
Center for Language and Speech Processing (CLSP), Johns Hopkins University 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
Keynote Speaker

Low Technology Adoption by Older Adults: Now What?
IROS Workshop on Geriatronics: 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
Keynote Speaker

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
Keynote Speaker

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
Invited RSS Early Career Spotlight Talk at AAAI'16 2016

Designing Robotic Systems to Assist Everyday Users
Microsoft Research 2015
Department of Computer Science, University of Minnesota, Twin Cities 2015

Community Service & Leadership

I actively serve the HRI, HCI, and Robotics communities. I have organized workshops 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 the 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

Associate Editor 2018–present
ACM Transactions on Human-Robot Interaction

Special Topic Guest Editor 2018–2019
Frontiers in Robotics and AI
Towards Real World Impacts: Design, Development, and Deployment of Social Robots in the Wild

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)	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*

Malone Postdoc Fellow Seletection Committee	2023, 2025

***Laboratory for Computational Sensing and Robotics**, Johns Hopkins University*

Robotics MSE Admission Committee	2022

***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

Selected Press

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