Victor Nikhil Antony

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Research Statement

I take a human-centered approach to develop embodied AI systems for human well-being. I co-design systems with domain experts and end users, then study them in real-world environments.

Education

Ph.D. in Computer Science — August 2021–February 2027 (expected)
Johns Hopkins University — Baltimore, MD, USA
Advisor: Chien-Ming Huang

M.S.E. in Computer Science — December 2023
Johns Hopkins University — Baltimore, MD, USA

B.S. in Computer Science — May 2021
University of Rochester — Rochester, NY, USA
Research advisors: Ehsan Hoque and Zhen Bai

Honors and Awards

O'Shaughnessy Ventures Fellowship	2026
Johns Hopkins Graduate Entrepreneurship Award	2026
Best Paper Award Honorable Mention, HRI'26	2026
HRI Sustainability Recognition, Lantern Demonstration	2026
Vizij Travel Grant (US$1,000)	2026
ACM/IEEE Human-Robot Interaction Pioneer	2025
ACM/IEEE HRI Outstanding Reviewer	2025

Grant Funding

G.1 **Classroom-Ready Social Robot for Foundational Literacy in Baltimore K-8 Schools** — 2026
Source: TEDCO, Baltimore Innovation Initiative (BII), Technology Advancement Grant
Amount: US$50,000 • PI: Victor Nikhil Antony

Publications

All publications are on my Google Scholar profile. Top-tier conferences (HRI, CHI, RSS) have acceptance rates around 25% and are considered premier venues for Computer Science and Robotics research.
* Equal contribution. Mentored students are highlighted in rose.

Journal Articles

J.4 **Introducing M: A Modular, Modifiable Social Robot**
Victor Nikhil Antony, Zhili Gong, Yoonjae Kim, and Chien-Ming Huang
IEEE Robotics and Automation Letters (RA-L) (2026)
https://arxiv.org/abs/2603.19134 | Accepted for publication

J.3 **Social Robots for Sleep Health: A Scoping Review**
Victor Nikhil 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.2 **ID.8: Co-Creating Visual Stories with Generative AI**
Victor Nikhil 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 *ACM TiiS Highlighted Paper*

J.1 **Detecting Parkinson Disease Using a Web-Based Speech Task: Observational Study**
Wasifur Rahman, Sangwu Lee, Md Saiful Islam, **Victor Nikhil Antony**, Harshil Ratnu, Mohammad Rafayet Ali, Abdullah Al Mamun, Ellen Wagner, Stella Jensen-Roberts, Emma Waddell, Taylor Myers, Meghan Pawlik, Julia Soto, Madeleine Coffey, Aayush Sarkar, Ruth Schneider, Christopher Tarolli, Karlo Lizarraga, Jamie Adams, Max A. Little, E. Ray Dorsey, and Ehsan Hoque
Journal of Medical Internet Research (2021)
Volume 23, Issue 10, Article e26305
https://doi.org/10.2196/26305

Conference Papers

C.12 **Robots as Mindfulness Anchors: Learnings from Participatory Design and Home Deployments**
Victor Nikhil Antony, Kai-Chieh Liang, Travolta Chiposi-Mudiwa, Esther Caiying Yao, and Chien-Ming Huang
Under review at the 22nd ACM/IEEE International Conference on Human-Robot Interaction (HRI'27)

C.11 **Towards Child-Centered Error Management In-the-Wild: Children's Reactions and Recovery Following Robot Errors**
Shiye Cao*, Shuning Wang*, **Victor Nikhil Antony**, Leyun Kim, and Chien-Ming Huang
Under review at the 22nd ACM/IEEE International Conference on Human-Robot Interaction (HRI'27)

C.10 **ELLA: Generative AI-Powered Social Robots for Early Language Development at Home**
Victor Nikhil Antony*, Shiye Cao*, Shuning Wang, and Chien-Ming Huang
Proceedings of the ACM Interaction Design and Children Conference (IDC) (2026)
https://doi.org/10.1145/3773077.3806113

C.9 **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 the ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2026)
https://doi.org/10.1145/3757279.3785645 | Acceptance rate: 23.2%
Best Paper Award Honorable Mention

C.8 **Lantern: A Minimalist Robotic Object Platform**
Victor Nikhil Antony*, Zhili Gong*, Guanchen Li, Clara Jeon, and Chien-Ming Huang
Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2026)
https://doi.org/10.1145/3757279.3785644 | Acceptance rate: 23.2%

C.7 **Interruption Handling for Conversational Robots**
Shiye Cao, Jiwon Moon, Amama Mahmood, **Victor Nikhil Antony**, Ziang Xiao, Anqi Liu, and Chien-Ming Huang
Proceedings of Robotics: Science and Systems (RSS) (2025)
https://arxiv.org/abs/2501.01568 | Acceptance rate: 27.4%

C.6 **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 the ACM Conference on Human Factors in Computing Systems (CHI) (2025)
Article 511, Pages 1–22
https://doi.org/10.1145/3706598.3713839 | Acceptance rate: 24.9%

C.5 **Xpress: A System for Dynamic, Context-Aware Robot Facial Expressions Using Language Models**
Victor Nikhil Antony, Maia Stiber, and Chien-Ming Huang
Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2025)
https://doi.org/10.1109/HRI61500.2025.10974045 | Acceptance rate: 25%

C.4 **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 the ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2025)
https://doi.org/10.1109/HRI61500.2025.10973948 | Acceptance rate: 25%

C.3 **Alchemist: LLM-Aided End-User Development of Robot Applications**
Ulas Berk Karli, Juo-Tung Chen, **Victor Nikhil Antony**, and Chien-Ming Huang
Proceedings of the 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.2 **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 the ACM/IEEE International Conference on Human-Robot Interaction (HRI) (2023)
Pages 506–515
https://doi.org/10.1145/3568162.3576995 | Acceptance rate: 25.3%

C.1 **Demographic Feature Isolation for Bias Research using Deepfakes**
Kurtis G. Haut, Caleb Wohn, **Victor Antony**, Aidan Goldfarb, Melissa Welsh, Dillanie Sumanthiran, M. Rafayet Ali, and Ehsan Hoque
Proceedings of the ACM International Conference on Multimedia (MM) (2022)
https://doi.org/10.1145/3503161.3549204 | Acceptance rate: 28.0%

Workshop Papers

W.4 **Practical Trade-offs in Generative Robot Expression Design**
Victor Nikhil Antony, Shiye Cao, and Chien-Ming Huang
HRI Vizij Workshop and Tutorial on Expressive Robot Faces (2026)

W.3 **Examining Barriers to Equitable Exosuit Use by Older Adults**
Kai-Chieh Liang, **Victor Nikhil Antony**, Junxin Li, Hao Su, and Chien-Ming Huang
HRI Equitable Robotics for Wellbeing Workshop (2026)

W.2 **Designing Social Robots that Engage Older Adults in Exercise: A Case Study**
Victor Nikhil Antony and Chien-Ming Huang
HRI Workshop on HRI for Aging in Place (2024)
https://arxiv.org/abs/2403.04153

W.1 **Projection-Based AR for Hearing Parent-Deaf Child Communication**
Victor Nikhil Antony, Adira Blumenthal, Ziyue Qiu, Ashely Tenesaca, Wanyin Hu, and Zhen Bai
Frameless (2020)
Volume 3, Issue 1, Article 19
https://repository.rit.edu/frameless/vol3/iss1/19

Demos

D.2 **Demonstrating Plant-Inspired Robots for Ambient HRI**
Victor Nikhil Antony and Chien-Ming Huang
Companion Proceedings of the 21st ACM/IEEE International Conference on Human-Robot Interaction (HRI Demo) (2026)
Pages 1149–1151
https://doi.org/10.1145/3776734.3794578

D.1 **Demonstrating Lantern and Its Variants: A Set of Minimal Robots**
Victor Nikhil Antony, Kai-Chieh Liang, and Chien-Ming Huang
Companion Proceedings of the 21st ACM/IEEE International Conference on Human-Robot Interaction (HRI Demo) (2026)
Pages 1146–1148
https://doi.org/10.1145/3776734.3794577
Sustainability Demonstration Recognition

Teaching

Introduction to Human-Computer Interaction (EN.601.490/690) Fall 2023
Teaching Assistant, Johns Hopkins University
Grading, office hours, and course project mentorship; guest lecture on participatory design.

Human-Robot Interaction (EN.601.491/691) Spring 2023, 2025
Teaching Assistant, Johns Hopkins University
Grading, office hours, and course project mentorship.

Mentoring

Mentored 10 undergraduate and 6 graduate students at Johns Hopkins University.

Selected Research Mentees

Ulas Berk Karli (MSE Robotics, Next: CS Ph.D. at Yale University)
Zhili Gong (MSE ME, Next: ME Ph.D. at Rice University)
Junxian (Jim) Wang (B.S. ME; MSE Robotics, Next: Robotics Ph.D. at Carnegie Mellon University)
Dokyung Yang (B.S. CS, Next: Software Development Engineer at Amazon)
William Song (B.S. CS, Next: Founding Engineer at Human Archive (YC W26))
Kai-Chieh Liang (MSE Robotics, Next: CS Ph.D. at Johns Hopkins University)
Adithya R. N. (MSE ME, Next: ME Ph.D. at Johns Hopkins University)

Professional Service

Organization Service for Conferences and Workshops

Lead Program Chair, ACM/IEEE HRI Pioneers Workshop — 2026
Publicity Chair, AAAI Fall Symposium on AI for Aging in Place — 2024

Conference and Workshop Paper Referee

ACM/IEEE International Conference on Human-Robot Interaction (HRI) — 2024–2027
ACM Conference on Human Factors in Computing Systems (CHI) — 2024–2026
ACM Symposium on User Interface Software and Technology (UIST) — 2026
ACM International Conference on Human-Agent Interaction (HAI) — 2024
IEEE International Conference on Robotics and Automation (ICRA) — 2024, 2027

Journal Article Referee

ACM Transactions on Human-Robot Interaction (THRI)
Robotics and Automation Letters (RA-L)
International Journal of Social Robotics
PLOS Digital Health

University Service

Facilitator, Ph.D. Mentor Hour — Fall 2022–2023
Facilitated two sessions connecting junior and senior Ph.D. students.

Invited Talks

The Design of On-Body Robots for Older Adults — Fall 2025
University of Chicago, Introduction to Human-Robot Interaction course

Designing Social Robots for Scalable Longitudinal Interventions — Summer 2026
Koç University, Arçelik Research Center for Creative Industries (KUAR)

Designing social robots for scalable, longitudinal interventions — Summer 2026
Colorado School of Mines, MIRRORLab Summer Speaker Series

Why (and How) to Co-Design Robots for Everyday Life — Fall 2026
University of Michigan, Design for Human-Robot Interaction course

Robots for Mindfulness in Later Life — Fall 2026
Blakehurst Senior Living

Can Social Robots Improve Our Everyday Lives? — Fall 2026
Carrollton Condominium - Senior Living

Prior Work Experience

Research Assistant — May 2020–May 2021
Human-Computer Interaction Lab, University of Rochester — Rochester, NY, USA
Machine learning for web-based, remote detection of Parkinson disease.

Research Assistant — June 2020–April 2021
Inter-Play Lab, University of Rochester — Rochester, NY, USA
Projection-based augmented reality for American Sign Language (ASL) learning and communication between hearing parents and deaf or hard-of-hearing children.

Machine Learning Intern — May–September 2019
TensorFlow, Google Summer of Code
Implemented core machine learning algorithms in Swift for TensorFlow.