

Jaya Narain

Sr. Research Scientist

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Apple Health AI

[Homepage](#) | [LinkedIn](#) | [Google Scholar](#)

Education

2015-2021	<i>PhD, Fluid Interfaces Group @ MIT Media Lab</i> Apple PhD Scholar in AI for Health & Wellness NSF Graduate Research Fellow	MIT
2015-2017	<i>MS, Mechanical Engineering</i>	MIT
2011-2015	<i>BS, Mechanical & Ocean Engineering</i>	MIT

Experience

2021-present	<i>Sr. Research Scientist, Apple Health AI</i> Applied machine learning for health and accessibility — Research: times series, atypical speech, affective computing, LLM instruction-following, fairness, representation learning Products: motion foundation model for AirPods Pro 3, Adaptive Voice Shortcuts for accessibility
2018-2021	<i>Research Assistant, MIT Media Lab</i> Human-centered machine learning, study design, signal processing, and data analysis for understanding nonverbal speech from minimally verbal individuals
2020	<i>PhD Intern, Apple Health AI</i>
2015-2017	<i>Research Assistant, MIT Global Engineering and Research Laboratory</i> Physics-based computational and analytical modeling and optimization of fluid-structural systems & design for developing markets
2014, 2015	<i>Intern, Microsoft Surface</i>

Selected Peer-Reviewed Publications (full list on [Google Scholar](#))

[1] Maxwell A Xu, **Jaya Narain**[†], Gregory Darnell[†], Haraldur Hallgrímsson, Hyewon Jeong, Darren Forde, Richard Fineman, Karthik J Raghuram, James M Rehg, Shirley Ren. “RelCon: Relative Contrastive Learning for a Motion Foundation Model for Wearable Data”. *ICLR 2025*. [†]Primary research mentor

[2] **Jaya Narain**, Vasudha Kowtha, Colin Lea, Lauren Tooley, Dianna Yee, Vikram Mitra, Zifang Huang, Miquel Espi Marques, Jon Huang, Carlos Avendano, Shirley Ren. “Voice Quality

Dimensions as Interpretable Primitives for Speaking Style for Atypical Speech and Affect”. *Interspeech 2025*.

[3] **Jaya Narain**, Amrit Romana, Vikram Mitra, Colin Lea, and Shirley Ren. “Affect Models Have Weak Generalizability to Atypical Speech”. *ACII 2025*.

[4] **Jaya Narain**, Zakaria Aldeneh, and Shirley Ren. “Speech Foundation Models Generalize to Time Series Tasks from Wearable Sensor Data”. *Workshop on Learning from Time-Series for Health, NeurIPS 2025*.

[5] Juyeon Heo, Christina Heinze-Deml, Shirley Ren, Oussama Elachqar, Udhay Nallasamy, Andy Miller, and **Jaya Narain**†. “Do LLMs “Know” Internally When They Follow Instructions?” *ICLR 2025*.
†Primary research mentor

[6] Juyeon Heo, Miao Xiong, Christina Heinze-Deml, and **Jaya Narain**†. “Do LLMs estimate uncertainty well in instruction-following?”. *ICLR 2025*. †Primary research mentor

[7] Ilker Demirel, Karan Thakkar, Benjamin Elizalde, Miquel Espi Marques, Shirley Ren, and **Jaya Narain**†. “Using LLMs for Late Multimodal Sensor Fusion for Activity Recognition” *Workshop on Learning from Time-Series for Health, NeurIPS 2025*. †Primary research mentor

[8] Amrit Romana, **Jaya Narain**, Tien Dung Tran, Andrea Davis, Jason Fong, Ramya Rasipuram, Vikram Mitra. “Switchboard-Affect: Emotion Perception Labels from Conversational Speech”. *ACII 2025*.

[9] **Jaya Narain***, Jenny Sun*, Oussama Elachqar, Haraldur Hallgrímsson, Feng Zhu, Shirley Ren. “Leveraging Periodicity for Robustness with Multi-modal Mood Pattern Models”. *Equal contribution, Workshop on Time Series in the Age of Large Models, NeurIPS 2024.

[10] Colin Lea*, Dianna Yee*, **Jaya Narain**, Zifang Huang, Lauren Tooley, Jeffrey Bigham, and Leah Findlater. “Latent Phrase Matching for Dysarthric Speech”. *Interspeech 2023*.

[11] Colin Lea, Zifang Huang, **Jaya Narain**, Lauren Tooley, Dianna Yee, Dung Tien Tran, Panayiotis Georgiou, Jeffrey Bigham, and Leah Findlater. “From user perceptions to technical improvement: Enabling people who stutter to better use speech recognition.” *Proceedings of the 2023 CHI Conference of Human Factors in Computing Systems*.

[12] **Jaya Narain**, Kristina T. Johnson, Thomas Quatieri, Rosalind Picard, and Pattie Maes “Modeling Real-World Affective and Communicative Nonverbal Vocalizations From Minimally Speaking Individuals”. *IEEE Transactions on Affective Computing*, 13(4), 2238-2253. 2022.

[13] Kristina T. Johnson*, **Jaya Narain***, Thomas Quatieri, Pattie Maes, and Rosalind Picard. “ReCANVo: A database of real-world communicative and affective nonverbal vocalizations”. *Nature Scientific Data*. August 2023. *Equal contribution.

[14] **Jaya Narain**, Ishwarya Ananthabhotla, Samuel Mendez, Cameron Taylor, Hosea Siu, Lora Brugnaro, and Adriana Mallozzi. “ATHack: Co-design and education in assistive technology development.” *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*.

[15] **Jaya Narain***, Tina Quach*, Monique Davey,* Hae Won Park, Cynthia Breazeal, and Rosalind Picard. “Promoting wellbeing with Sunny, a chatbot that facilitates positive messages within social groups.” *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*. *Equal contribution.

Patents

- Patent 11,937,556. Channel-Less Drip Irrigation Emitters and Methods of Using the Same; issued March 2024.
- Patent 14/603,142: Device Sandwich Structured Composite Housing; issued February 2017.
- Patent 12,396,411: Systems and Methods for Designing and Modeling Pressure-Compensating Drip Emitters, and Improved Devices in View of the Same; issued August 2025

Invited Talks

- Invited Speaker, Workshop on Learning from Time-Series for Health. "Data Efficient and Learning and Generalization with Sensors and Speech". NeurIPS 2025.
- Invited Speaker, National Americans with Disabilities Act (ADA) Symposium - Pittsburgh, PA, July 2018
- Panelist. MIT International Design Center. "Envisioning the future of technology-enabled mobility: a panel discussion". October 10, 2019
- Panelist. MIT Open Learning xTalks. "Assistive Technology for Opening Minds, Hands, & Hearts". April 2019

Selected Outreach and Teaching

- Co-Founder and Co-Director of MIT Assistive Technology Hackathon (MIT ATHack), 2013-2021
- Mentor for PhD fellows in Apple Scholars in AI/ML program (2023-present)
- Workshop chair for Apple Workshop on Machine Learning for Health (2022-2025)
- Panelist for Code with Klossy Spring Bay Area Event, 2024
- Mentor for Apple Women in Science and Engineering Mentorship, 2022.
- Co-President (2013-2014), Project Manager (2012-2013), for MIT Engineers Without Borders, 2011-2015
- Instructor/mentor for classes at MIT -- Introduction to Design (2.00) and Toy Design (2.00b), Global Engineering (2.76)
- Graduate Resident Advisor (GRA) in MIT Next House, 2018-2021
- Mentor for MIT MakerWorks, 2018-2019