

# Akshay Paruchuri

✉ akshaypa@stanford.edu | 🌐 akshayparuchuri.com/ | 📧 yahskapar | in akshayparuchuri

## Summary

I'm a computer scientist by training. For most of my career, I've built and evaluated AI systems to improve health and well-being. I currently focus on multidisciplinary measurement of AI systems at the Center for AI Standards and Innovation (CAISI) within the National Institute of Standards and Technology (NIST). I've published in leading venues on topics such as remote health sensing (WACV, NeurIPS), 3D reconstruction (ECCV, MICCAI), LLM-based conversational agents for personal health (EMNLP, Nature Communications, Nature), and energy-efficient operation of smart glasses (ISMAR). I'm generally interested in opportunities that would allow me to continue to deepen my research expertise while leading and working on projects that benefit people everywhere, whether through foundational research, real-world products, or shaping how these systems are evaluated and deployed.

## Education

### University of North Carolina at Chapel Hill

PH.D. IN COMPUTER SCIENCE

- Advisor: Henry Fuchs
- Thesis Title: *Toward Perceptual and Ubiquitous Intelligence for Healthcare*

Chapel Hill, NC, USA

Aug 2021 - Dec 2025

### North Carolina State University

B.S. IN ELECTRICAL AND COMPUTER ENGINEERING

Raleigh, NC, USA

Aug 2014 - Dec 2019

## Experience

### National Institute of Standards and Technology (NIST)

RESEARCH SCIENTIST (MANAGER: STEVIE BERGMAN)

- Research on evaluating and monitoring frontier AI at the Center for AI Standards and Innovation (CAISI).

San Francisco, CA, USA

Sep 2026 - Present

### Stanford University

POSTDOCTORAL SCHOLAR (HOST: SANMI KOYEJO)

- Home institution for Intergovernmental Personnel Act (IPA) assignment to CAISI, within NIST. Academic collaboration with both the Stanford Trustworthy AI Research (STAIR) and the Stanford Translation AI (STAI) labs.

Stanford, CA, USA

Sep 2026 - Present

### Stanford University

POSTDOCTORAL SCHOLAR (HOST: EHSAN ADELI)

- Research on building and evaluating multimodal AI systems, with a focus on psychiatry applications.

Palo Alto, CA, USA

Jan 2026 - Sep 2026

### Google

VISITING FACULTY RESEARCHER (MANAGER: ISHAN CHATTERJEE)

- Research involving context-aware, multimodal AI and its usage as an interactive assistant for health and well-being, with a focus on realizing this through AR smart glasses for practical, all-day use.

San Jose, CA, USA

Apr 2026 - Sep 2026

### Dexcom

RESEARCH CONSULTANT (MANAGER: MARK DERDZINSKI)

- Research and product development focused on improving frontier metabolic health agents.

Palo Alto, CA, USA

May 2026 - Aug 2026

### Stanford Institute for Human-Centered Artificial Intelligence (HAI)

AI4ALL GRADUATE MENTOR

- Teaching and mentoring high school students interested in health AI.

Palo Alto, CA, USA

Jun 2026 - Jul 2026

### Istituto Dalle Molle di Studi sull'Intelligenza Artificiale (IDSIA)

VISITING RESEARCHER (ADVISOR: PIOTR DIDYK)

- Research involving computer vision and human perception, with a focus on multimodal language models (MLMs) and interpretability.

Lugano, Ticino, CH

Jun 2025 - Jan 2026

## Google

STUDENT RESEARCHER (MANAGER: ISHAN CHATTERJEE)

- Research involving context-aware, multimodal systems, with a focus on realizing AR smart glasses for all-day use.

Seattle, WA, USA

Feb 2025 - Jan 2026

## University of North Carolina at Chapel Hill

GRADUATE RESEARCH ASSISTANT (ADVISOR: HENRY FUCHS)

- Research at the intersection of computer vision, machine learning, and health AI.

Chapel Hill, NC, USA

Aug 2021 - Dec 2025

## Google

STUDENT RESEARCHER (MANAGERS: XIN LIU AND DANIEL MCDUFF)

- Research at the intersection of healthcare and language models.

Seattle, WA, USA

Mar 2024 - Aug 2024

## Kitware

RESEARCH AND DEVELOPMENT INTERN (MANAGER: BRIAN CLIPP)

- Various research projects involving person re-identification, object detection, segmentation, and tracking.

Carrboro, NC, USA

Apr 2023 - Jul 2023

## Nike

EMBEDDED SYSTEMS ENGINEER (MANAGER: VIKRAM MALHOTRA)

- Developed hardware, algorithms, and software toward novel, wearable consumer devices for experiences involving physical fitness.

Beaverton, OR, USA

Jan 2020 - Jul 2021

## Nike

EMBEDDED SYSTEMS ENGINEERING INTERN (MANAGER: VIKRAM MALHOTRA)

- Prototyped a feature-rich, non-form factor PCB to characterize power consumption in unique contexts and developed software toward meaningful gesture recognition using adaptive, self-lacing shoes.

Beaverton, OR, USA

May 2019 - Aug 2019

## Publications

---

- 18** Xiaomin Li, Yuexing Hao, Jianheng Hou, Jintao Huang, Qianfeng Wen, Shirley Huang, Yifan Liu, Xiaoyi Liu, Yilan Fan, Yijun Wang, Koutian Wu, Ruoqi Gao, Muhammad Ahmed Mohsin, Jing Tang, Brihi Joshi, Heming Liu, Zheyuan Deng, Zonglin Di, Sankalp Jajee, Jiuyao Lu, Zhiwei Zhang, Saksham Kapoor, Ishan Gupta, Yunhan Zhao, Chanwoo Park, Yucheng Lu, Bing Hu, Weihang Xiao, Aravind Mohan, Hanwen Xing, Runyu Zhang, Mihir Kulshreshtha, Yuanda Xu, Qianyu Zhu, Dianzhuo Wang, Yuxin Xiao, Bowen Jiang, Yongye Su, Wenhao Chai, Zuxin Liu, Lawrence Yunliang Chen, Xuandong Zhao, Ethan Ye, Shivam Patel, Jason Xie, Alex Martin Richmond, Weixiang Ding, Emre Okcular, Diya Mathew, Ziheng Wang, Rana M. Shahroz Khan, Zhejian Peng, Fang Wu, Fan Nie, Xinyang Han, Yubin Kim, Jiawei Zhang, Zhenting Qi, Huangyuan Su, Xu Pan, Abinitha Gourabathina, Hyewon Jeong, Hemanth Neelgund Ramesh, Kumail Alhamoud, Kimia Hamidieh, Zidi Xiong, Samuel Schmidgall, Pengrui Han, Yepeng Huang, Yongheng Wang, Bowen Yang, Alex Gu, Yuchu Wang, **Akshay Paruchuri**, Brenna Li, Hejie Cui, Jiayuan Ding, Chaosheng Dong, Jiahao Wang, Yixuan He, Chi Wang, Pamela Bhattacharya, Tianyi Peng, Paul Pu Liang, Mitchell Gordon, Yilun Du, Marinka Zitnik, James Zou, Prasanna Tambe, Philip Torr, Emily Fox, Asu Ozdaglar, Dawn Song. *MatrAix: Simulating the World with 8.3 Billion Persona Agents*. *arXiv preprint:2608.04205*, 2026. Pre-print.
- 17** Narayan Schuetz, Yuze Bai, Lianggang Pan, Edgar Eggert, Favour Nerrise, Juan Delgado-SanMartin, Max Rosenblattl, Milana Gurbanova, Mohammad Asadi, Anders Johnson, Paul Schmiedmayer, Dennis Wang, Allan Lawrie, Daniel Seung Kim, Xin Liu, **Akshay Paruchuri**, Ehsan Adeli, Euan Ashley, Kelly W. Zhang. *OpenMHC: Accelerating the Science of Wearable Foundation Models*. *arXiv preprint:2607.16235*, 2026. In submission.
- 16** **Akshay Paruchuri**, Sanmi Koyejo, Ehsan Adeli. *Same Evidence, Different Answer: Auditing Order Sensitivity in Multimodal Large Language Models*. *arXiv preprint:2606.26079*, 2026. In submission.
- 15** Yidi Huang, Asad Aali, Li-Ching Chen, Xiaoke Huang, Hayoung Jeong, Arun Kavishwar, Ashwin Kumar, Joanna Kondylis, Katie Matton, Huy Nghiem, Ayush Noori, **Akshay Paruchuri**, Jathurshan Pradeepkumar, Shuvom Sadhuka, Neha Srivathsa, Alyssa Unell, Anurag Vaidya, Leo Anthony Celi, Rushika Fernandopulle, Shalmali Joshi, Harry Reyes Nieva, Divya Shanmugam, Liyue Shen, Karandeep Singh, Shengpu Tang, Yun Liu, Quang Duong, Can Kirmizi, Trenton Chang, Elizabeth Healey. *Recent Advances, Applications and Open Challenges in Machine Learning for Health: Reflections from Research Roundtables at ML4H 2025 Symposium*. *SSRN 7396919*, 2026. Pre-print.

- 14 Akshay Paruchuri**, Ishan Chatterjee, Henry Fuchs, Ehsan Adeli, Piotr Didyk. The Cost of Language: Centroid Erasure Exposes and Exploits Modal Competition in Multimodal Language Models. *arXiv preprint:2604.14363*, 2026. Accepted to COLM 2026.
- 13 Tianwen Zhou, Akshay Paruchuri**, Josef Spjut, Kaan Akşit. Editing Physiological Signals in Videos Using Latent Representations. *arXiv preprint:2509.25348*, 2025. Accepted to CVPR 2026 Workshop on Subtle Visual Computing.
- 12 A. Ali Heydari\***, Ken Gu\*, Vidya Srinivas\*, Hong Yu\*, **Akshay Paruchuri\***, Zhihan Zhang, Yuwei Zhang, Qian He, Hamid Palangi, Nova Hammerquist, Ahmed A. Metwally, Brent Winslow, Yubin Kim, Kumar Ayush, Yuzhe Yang, Girish Narayanswamy, Maxwell A. Xu, Jake Garrison, Samuel Schmidgall, Amy Aremnto Lee, Jenny Vafeiadou, Ben Graef, Isaac R. Galatzer-Levy, Erik Schenck, Andrew Barakat, Javier Perez, Jacqueline Shreibati, John Hernandez, Anthony Faranesh, Naghmeh Rezaei, Javier L. Prieto, Connor Heneghan, Yun Liu, Jiening Zhan, Mark Malhotra, Shwetak Patel, Tim Althoff, Xin Liu<sup>†</sup>, Daniel McDuff<sup>†</sup>, and Xuhai "Orson" Xu<sup>†</sup>. The Anatomy of a Personal Health Agent. *arXiv preprint arXiv:2508.20148*, 2025. Accepted to Nature.
- 11 Akshay Paruchuri**, Maryam Aziz, Rohit Vartak, Ayman Ali, Best Uchehara, Xin Liu, Ishan Chatterjee, Monica Agrawal. "What's Up, Doc?": Analyzing How Users Seek Health Information in Large-Scale Conversational AI Datasets. *arXiv preprint arXiv:2506.21532*, 2025. Accepted to EMNLP 2025 (Findings).  
[Spotlight Talk at Machine Learning for Health (ML4H) 2025 Conference]
- 10 Ken Gu, Zhihan Zhang, Kate Lin, Yuwei Zhang, Akshay Paruchuri**, Hong Yu, Mehran Kazemi, Kumar Ayush, A. Ali Heydari, Maxwell A. Xu, Yun Liu, Ming-Zher Poh, Yuzhe Yang, Mark Malhotra, Shwetak Patel, Hamid Palangi, Xuhai Xu, Daniel McDuff, Tim Althoff, Xin Liu. RADAR: Benchmarking Language Models on Imperfect Tabular Data. *arXiv preprint arXiv:2506.08249*, 2025. Accepted to NeurIPS 2025 Datasets and Benchmarks Track.
- 9 Akshay Paruchuri**, Sinan Hersek, Lavisha Aggarwal, Qiao Yang, Xin Liu, Achin Kulshrestha, Andrea Colaço, Henry Fuchs, and Ishan Chatterjee. EgoTrigger: Toward Audio-Driven Image Capture for Human Memory Enhancement in All-Day Energy-Efficient Smart Glasses. *arXiv preprint arXiv:2508.01915*, 2025. Accepted to ISMAR 2025. [TVCG Journal Paper, Top 8%, 60 of 762 submissions]
- 8 Akshay Paruchuri**, Jake Garrison, Shun Liao, John Hernandez, Jacob Sunshine, Tim Althoff, Xin Liu, and Daniel McDuff. What Are the Odds? Language Models Are Capable of Probabilistic Reasoning. In *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing* (pp. 11712-11733), November 2024.
- 7 Akshay Paruchuri\***, Mike A. Merrill\*, Naghmeh Rezaei, Geza Kovacs, Javier Perez, Yun Liu, Erik Schenck, Nova Hammerquist, Jake Sunshine, Shyam Tailor, Kumar Ayush, Hao-Wei Su, Qian He, Cory McLean, Mark Malhotra, Shwetak Patel, Jiening Zhan, Tim Althoff<sup>†</sup>, Daniel McDuff<sup>†</sup>, and Xin Liu<sup>†</sup>. Transforming wearable data into personal health insights using large language model agents. *Nat Commun* 17, 1143 (2026).  
<https://doi.org/10.1038/s41467-025-67922-y>
- 6 Shuxian Wang, Akshay Paruchuri**, Zhaoxi Zhang, Sarah McGill, Roni Sengupta. Structure-Preserving Image Translation for Depth Estimation in Colonoscopy. In *International Conference on Medical Image Computing and Computer-Assisted Intervention* (pp. 667-677). Cham: Springer Nature Switzerland, October 2024. [Oral]
- 5 Akshay Paruchuri**, Samuel Ehrenstein, Shuxian Wang, Inbar Fried, Stephen M. Pizer, Marc Niethammer, and Roni Sengupta. (2024). Leveraging Near-Field Lighting for Monocular Depth Estimation from Endoscopy Videos. In *European Conference on Computer Vision* (pp. 473-491). Springer, Cham.
- 4 Xin Liu, Akshay Paruchuri\***, Girish Narayanswamy\*, Xiaoyu Zhang, Jiankai Tang, Yuzhe Zhang, Roni Sengupta, Shwetak Patel, Yuntao Wang, and Daniel McDuff. rPPG-Toolbox: Deep Remote PPG Toolbox. *Advances in Neural Information Processing Systems*, vol. 36, 2024. [1K+ stars on GitHub as of May, 2026]
- 3 Akshay Paruchuri**, Xin Liu, Yulu Pan, Shwetak Patel, Daniel McDuff, and Soumyadip Sengupta. Motion Matters: Neural Motion Transfer for Better Camera Physiological Measurement. *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, January 2024, pp. 5933-5942.  
[Oral, Top 2.6%, 53 of 2042 submissions]

- 2 Qian Zhang, **Akshay Paruchuri**, Young-Woon Cha, Jia-Bin Huang, Jade Kandel, Howard Jiang, Adrian Ilie, Andrei State, Danielle Szafer, Daniel Szafer, and Henry Fuchs. Reconstruction of Human Body Pose and Appearance Using Body-Worn IMUs and a Nearby Camera View for Collaborative Egocentric Telepresence. *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, Shanghai, China, 2023, pp. 96-97, doi: 10.1109/VRW58643.2023.00025.
- 1 Angelos Angelopoulos, Austin Hale, Husam Shaik, **Akshay Paruchuri**, Ken Liu, Randal Tuggle, and Daniel Szafer. Drone Brush: Mixed Reality Drone Path Planning. *Late-Breaking Reports at the IEEE/ACM International Conference on Human-Robot Interaction (HRI 2022)*.

## Teaching

---

### STANFORD

AI4ALL Pre-Collegiate Program (Summer 2026, Graduate Mentor)

### UNC CHAPEL HILL

2D Computer Graphics (Fall 2024, Teaching Assistant)

## Mentoring

---

Jonas Mirlach (ETH Zurich CS MS, Fall 2026-Present)  
Fangrui Huang (Stanford CS PhD, Winter 2026-Present)  
Favour Nerrise (Stanford EE PhD, Winter 2026-Summer 2026)  
Xiaoyue Fan (UCL CS MS, Winter 2026-Summer 2026)  
Haoyang Liu (Stanford SYMSYS BS, Winter 2026-Spring 2026)  
Jessica Brown (Stanford CS PhD, Winter 2026-Spring 2026)  
Tianwen Zhou (UCL CS MS, Summer 2025-Fall 2025, now at Huawei as an AI Researcher)  
Ashley Neall (UNC CS BS, NSF GRFP Recipient, Fall 2024-Spring 2026, now at MIT Media Lab)  
Ray Shealy (UNC CS BS, Fall 2024-Fall 2025, now at USAA as a SWE)  
Yulu Pan (UNC CS BS, Fall 2022-Spring 2023, now at UNC Chapel Hill as a CS PhD)  
Mingxuan Li (UNC CS BS, Spring 2022, now at Tesla)

## Presentations

---

### From Sensing to Understanding: Building All-Day Wearable Systems for Personal Health Management

Keynote Presentation, Everyday Wearables for Personalized Health and Well-Being Workshop at CHI, Barcelona, ES (Spring 2026)

### ”What’s Up, Doc?”: Analyzing How Users Seek Health Information in Large-Scale Conversational AI Datasets

Spotlight Talk, ML4H, San Diego, CA (Fall 2025)

### EgoTrigger: Toward Audio-Driven Image Capture for Human Memory Enhancement in All-Day Energy-Efficient Smart Glasses

Journal Paper Presentation, IEEE ISMAR (Fall 2025)

### Toward All-Day Ambient and Wearable Intelligence for Healthcare

Research Talk, Stanford Translation AI (STAI) Lab, Remote (Summer 2025)

Research Talk, NYU Immersive Computing Lab, Remote (Fall 2025)

Research Talk, UCL Computational Light Laboratory, Remote (Fall 2025)

### Your life’s co-pilot. In your glasses.

Research Talk, NVIDIA Research, Durham, NC (Summer 2025)

### Motion Matters: Neural Motion Transfer for Better Camera Physiological Sensing

Poster Presentation, International Conference on Computational Photography (Summer 2023)

Poster Presentation, UNC Data Science Day (Fall 2023)

Oral + Poster Presentation, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) (Winter 2024)

## Proposals

---

**NIH SCH: An Augmented Reality Neurorehabilitation System for Monitoring and Management of Motor Symptoms of Parkinson’s Disease.** Project Number: 1R01HD111074 (\$1,186,393 across 4 years). Role: Student lead. I wrote significant portions of the proposal under the supervision of Professor Henry Fuchs and I helped in various aspects of the proposal submission process.

## Outreach & Academic Service

---

## **Outreach**

UNC-CH Computer Science Student Association Officer, Summer 2023 - Spring 2024  
UNC-CH Computer Science Student Association President, Fall 2022 - Summer 2023  
UNC CS Fellowship Panel Organizer, Fall 2022  
Decoding Graduate Programs in CS Panel Member, Fall 2022  
UNC CS Middle School/High School Open House Volunteer, Spring 2023  
UNC CS Vision Seminar Organizer, Spring 2023  
Summer Geometry Initiative (SGI) Mentor, Summer 2024

## **Academic Service**

IEEE VR 2023, Reviewer  
Information Systems Frontiers 2024, Reviewer  
NeurIPS 2024 Datasets and Benchmarks, Reviewer  
CSCW 2025, Reviewer  
CHI 2025, Reviewer  
CVPR 2025 - Workshop on Computer Vision for Mixed Reality, Reviewer  
ISMAR 2025, Reviewer  
UIST 2025, Reviewer  
ML4H 2025, Reviewer and Junior Research Roundtable Chair  
EuroGraphics 2026, Reviewer  
Pattern Recognition 2026, Reviewer  
CHI 2026, Reviewer  
SIGGRAPH 2026, Reviewer  
MICCAI 2026, Reviewer  
CAIS 2026 (Demo Track), Reviewer  
ECCV 2026, Reviewer, **[Noted as an Outstanding Reviewer]**  
ISWC 2026, Technical Program Committee Member and Reviewer  
COLM 2026, Reviewer  
NeurIPS 2026, Reviewer  
COLM 2026 Workshop on Deploying AI in Healthcare (DAIH), Reviewer  
ACL Rolling Review (ARR), Reviewer  
ML4H 2026, Reviewer