

Manasa Kalanadhabhatta

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Education

2018 - 2024

University of Massachusetts Amherst

Ph.D. in Computer Science

M.S. in Computer Science

Doctoral Dissertation: Developing Digital Biomarkers of Early Childhood Mental Health Using Multimodal Sensor Data

Committee: Deepak Ganesan*, Tauhidur Rahman*, Ravi Karkar, Adam Grabell, Mary Czerwinski

2014 - 2018

Shiv Nadar University

B.Tech. in Computer Science and Engineering with a Minor in English

Thesis: Exploring Event Detection and Localization through Social Media Analysis

Experience

09/2024 - Present

AR Input and Interactions, Meta Reality Labs

Research Scientist

Machine learning for wearable input and interaction systems using electromyography signals.

05/2023 - 09/2023

AR Input and Interactions, Meta Reality Labs

05/2022 - 08/2022

Research Intern

Large-scale multimodal contrastive learning for electromyography-based neuromotor interfaces.

06/2021 - 09/2021

Pervasive Systems Team, Nokia Bell Labs

Research Intern

Multimodal, multi-device modeling of mental fatigue using wearable devices.

12/2017 - 05/2018

School of Information Systems, Singapore Management University

Visiting Undergraduate Researcher

Undergraduate thesis on event detection and localization via social media image analysis.

Publications

Conference/Journal Articles

1. **Manasa Kalanadhabhatta**, Mohammad Mehdi Rastikerdar, Tauhidur Rahman, Adam S Grabell, and Deepak Ganesan, "Playlogue: Dataset and Benchmarks for Analyzing Adult-Child Conversations During Play". *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* vol 8, no. 4 (2024).
2. **Manasa Kalanadhabhatta**, Adrelys Mateo Santana, Lynnea Mayorga, Tauhidur Rahman, Deepak Ganesan, and Adam Grabell, "Multi-stakeholder Perspectives on Mental Health Screening Tools for Children". *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*. ACM, 2024.
3. **Manasa Kalanadhabhatta**, Shaily Roy, Trevor Grant, Asif Salekin, Tauhidur Rahman, and Dessa Bergen-Cico, "Detecting PTSD Using Neural and Physiological Signals: Recommendations from a Pilot Study". *International Conference on Affective Computing and Intelligent Interaction (ACII)*. IEEE, 2023.
4. **Manasa Kalanadhabhatta**, Adrelys Mateo Santana, Deepak Ganesan, Tauhidur Rahman, and Adam Grabell, "Extracting Multimodal Embeddings via Supervised Contrastive Learning for Psychological Screening". *International Conference on Affective Computing and Intelligent Interaction (ACII)*. IEEE, 2022.
5. **Manasa Kalanadhabhatta**, Adrelys Mateo Santana, Zhongyang Zhang, Deepak Ganesan, Adam Grabell, and Tauhidur Rahman, "EarlyScreen: Multi-scale Instance Fusion for Predicting Neural Activation and Psychopathology in Preschool Children". *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* vol 6, no. 2 (2022).

6. **Manasa Kalanadhabhatta**, Chulhong Min, Alessandro Montanari, and Fahim Kawsar, “FatigueSet: A Multi-modal Dataset for Modeling Mental Fatigue and Fatigability”. *International Conference on Pervasive Computing Technologies for Healthcare (Pervasive Health)*. EAI, 2021.
7. **Manasa Kalanadhabhatta**, Tauhidur Rahman, and Deepak Ganesan, “Effect of Sleep and Biobehavioral Patterns on Multidimensional Cognitive Performance: Longitudinal, In-the-Wild Study”. *Journal of Medical Internet Research* 23, no. 2 (2021).
8. Akhil Mathur, **Lakshmi Manasa Kalanadhabhatta**, Rahul Majethia, and Fahim Kawsar, “Moving Beyond Market Research: Demystifying Smartphone User Behavior in India”. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 1, no. 3 (2017).

Workshop Papers

7. Kunchay Sahiti, **Lakshmi Manasa Kalanadhabhatta**, Suman Sankar Bhunia, Akshit Singhal, and Rahul Majethia, “Smartphone-based Qualitative Analyses of Social Activities During Family Time”. *International Workshop on Human-Centered Sensing, Networking, and Systems*. ACM, 2017.
8. **Lakshmi Manasa Kalanadhabhatta**, Akhil Mathur, Rahul Majethia, and Fahim Kawsar, “Application Overchoice: Preliminary Lessons from a Longitudinal Study”. *International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp): Adjunct*. ACM, 2017.
9. Rahul Majethia, Akshit Singhal, **Lakshmi Manasa K**, Kunchay Sahiti, Shubhangi Kishore, and Vijay Nandwani, “AnnoTainted: Automating Physical Activity Ground Truth Collection Using Smartphones”. *International Workshop on Physical Analytics*. ACM, 2016.
10. Rahul Majethia, Varun Mishra, Akshit Singhal, **Lakshmi Manasa K**, Kunchay Sahiti, and Vijay Nandwani, “PeopleSave: Recommending Effective Drugs Through Web Crowdsourcing”. *International Conference on Communication Systems and Networks (COMSNETS)*. IEEE, 2016.

Posters and Extended Abstracts

11. **Manasa Kalanadhabhatta**, Deepak Ganesan, and Tauhidur Rahman, “Towards Accurate and Scalable Mental Health Screening Technologies for Young Children”. *UbiComp/ISWC '23 Adjunct: Adjunct Proceedings of the 2023 ACM International Joint Conference on Pervasive and Ubiquitous Computing & the 2023 ACM International Symposium on Wearable Computing*. ACM, 2023.
12. Kunchay Sahiti and **Lakshmi Manasa Kalanadhabhatta**, “Analysis of Peer Group Behavior Among University Students”. *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems*. ACM, 2018.

Honors and Awards

Research Awards

- Gaetano Borriello Outstanding Student Award, ACM UbiComp (2023)
- Dissertation Award, UMass Amherst Center for Research on Families (2023)
- Technology Development Award for EarlyScreen [5], UMass Office of Technology Commercialization & Ventures (2022)
PIs: Adam Grabell and Tauhidur Rahman
- Innovators Jump-Start Program selection for EarlyScreen [5], I-Corps @ UMass Amherst (2021)

Invited Talks

- Invited Seminar Series, IEEE Computer Society Chapter, IEEE San Diego Section. March 2024.
- Department of Biomedical Informatics Seminar Series, Emory University School of Medicine. January 2024.

Scholarships and Travel Grants

- Travel Grant for ACM UbiComp/ISWC, National Science Foundation + UbiComp/ISWC Doctoral Colloquium (2023)
- CRA-WP Grad Cohort for Women scholar, Computing Research Association (2021)
- Lori A. Clarke Scholarship in Computer Science, UMass Amherst College of Information & Computer Sciences (2019)
- Travel Grant for ACM MobiSys, ACM SIGMOBILE (2018)
- Undergraduate academic scholarship, Shiv Nadar University (2014-2018)

Teaching Experience

Fall 2018

CS328: Mobile Health Sensing and Analytics

Spring 2020

Teaching Assistant

Led weekly tutorials and hands-on laboratory sessions on Android sensing and app development. Hosted office hours, designed and graded assignments, and mentored teams on course projects.

Summer 2019

Turing Summer Program at UMass Amherst

Co-instructor

Taught introductory computer science concepts and Python/Android programming to local high school students. Mentored teams on mobile/health-sensing projects.

Professional Service

Peer Review

- Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT; 2020 - present)
- ACM CHI Conference on Human Factors in Computing Systems (2022 - present)
- IEEE Pervasive Computing (2021)
- ACM International Symposium on Wearable Computing (ISWC; 2021)
- ACM UbiComp Posters and Demos (2019)

Conference and Workshop Organization

- Co-organizer and TPC Member, ACM UbiComp Workshop on Mental Health: Sensing and Intervention (2022 - present)
- TPC Member, ACM UbiComp Workshop on Computing for Well-being (2024)
- Session Chair, Digital Wellbeing, ACM CHI 2024
- Publicity and Social Media Co-chair, ACM UbiComp/ISWC 2023
- Co-organizer and TPC Member, ACM MobiSys Workshop on Emerging Devices for Digital Biomarkers (2022)
- Speakers and Sponsors Co-chair, Voices of Data Science at UMass Amherst (2021)
- Student Volunteer, ACM UbiComp (2020)
- Student Volunteer, Grace Hopper Celebration for Women in Computing (2019)

Departmental Service

- CICS Graduate Student Representative (2022-23)
- Ph.D. Co-Chair, Graduate Women in CS (2021-22)
- Member, CICS Graduate Social Committee (2020-21)
- Member, CICS Committee Against Racism and for Equity (2020-21)
- Co-founder, ACM-Women Shiv Nadar University student chapter (2017)