Meena Devii Muralikumar

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Research Statement

My research interests are broadly in the intersection of Human-Computer Interaction and Artificial Intelligence/Machine Learning. I study if and how AI/ML algorithms are human-centered and challenges involved in using them as design material. I seek to bridge knowledge gaps for non-experts of AI/ML, especially designers and UX practitioners, and develop solutions for better engagement with AI/ML algorithms during the design process.

Education

2019 - current **University of Washington, Seattle**, *PhD, Human Centered Design and Engineering*, GPA: 3.95/4.0.
Advised by Prof. David McDonald

2017-2019 **University of California, Irvine**, *MS, Informatics*, GPA: 3.96/4.0.

2011-2015 **Amrita Vishwa Vidyapeetham**, *BTech, Computer Science and Engineering*, GPA: 9.3/10.0.

Academic Research Experience

2020 - current **Research Assistant**, *Social Computational Systems Lab, HCDE, UW*, Seattle, WA.

- Conducted a pilot study using surveys to evaluate the performance of the machine learning model, Perspective, to detect toxicity in online comments from social media websites
- Leading the subsequent large-scale study based on the pilot under Dr. David McDonald's guidance

2019 **Research Assistant**, *Emerging Capacities of Mass Participation Laboratory, HCDE, UW*, Seattle, WA.

- Analyzed interview data from journalists working on the online misinformation and disinformation beat and synthesized findings under the supervision of PhD student Melinda Haughey

2019 **Research Assistant**, *Human-Centered Data Science Lab, HCDE, UW*, Seattle, WA.

- Analyzed online fan fiction data using quantitative methods and created visualizations under the supervision of Dr. Aragon and PhD student Jenna Frens

2018-2019 **Research Assistant**, *Evoke Lab, Informatics, UCI*, Irvine, CA.

- Conducted an experimental pilot study under Dr. Matthew Bietz's supervision to investigate if visualizations could help users understand algorithms in Twitter
- Developed a mock-up of Twitter's interface and algorithm and used D3.js visualizations for the experimental condition
- Published findings as a poster at ACM CSCW 2019

2018–2019 **Research Assistant**, *Transformative Play Lab, Informatics, UCI*, Irvine, CA.

- Designed, developed, and evaluated a narrative Virtual Reality experience based on an original theatrical musical under the supervision of Dr. Tess Tanenbaum

2018 **Research Assistant**, *Evoke Lab, Informatics, UCI*, Irvine, CA.

- Designed and executed a qualitative study to understand and support user motivations for online donations to charities, along with a team of 4 Master's students under the guidance of Dr.Matthew Bietz
- Conducted competitive analysis and semi-structured interviews as part of the study
- Analyzed interview data using affinity diagrams and derived themes
- Devised persuasive design patterns for charity websites that augment user's intrinsic motivation to donate

Publications

Conference Proceedings

- Melinda McClure Haughey, *Meena Devii Muralikumar*, Cameron A. Wood, and Kate Starbird. 2020. **On the Misinformation Beat: Understanding the Work of Investigative Journalists Reporting on Problematic Information Online**. Proc. ACM Hum.-Comput. Interact. 4, CSCW2, Article 133 (October 2020), 22 pages. DOI:https://doi.org/10.1145/3415204

- Saumya Gupta, Theresa Jean Tanenbaum, *Meena Devii Muralikumar*, and Aparajita S. Marathe. 2020. **Investigating Roleplaying and Identity Transformation in a Virtual Reality Narrative Experience**. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–13. DOI:https://doi.org/10.1145/3313831.3376762

Posters
- *Meena Devii Muralikumar* and Matthew J. Bietz. 2019. **Visualizing Algorithmic Selection in Social Media**. In Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing (CSCW '19). Association for Computing Machinery, New York, NY, USA, 319–323. DOI:https://doi.org/10.1145/3311957.3359476

Workshop Proceedings
- *Meena Devii Muralikumar* and Bonnie Nardi. 2018. **Addressing limits through tracking food**. In Proceedings of the 2018 Workshop on Computing within Limits (LIMITS '18). Association for Computing Machinery, New York, NY, USA, Article 3, 1–9 DOI:https://doi.org/10.1145/3232617.3232620

Academic Teaching Experience

2020 **Teaching Assistant**, *HCDE, UW*, Seattle, WA.
- Summer 2020 - HCDE 598. Designing for Virtual Reality
- Fall 2020 - HCDE 310 Interactive Systems Design and Technology
- Winter 2021 - 517 Usability Testing

2018–2019 **Teaching Assistant**, *Informatics, UCI*, Irvine, CA.
- Spring 2019 - IN4MATX 191B. Senior Design Project
- Winter 2019 - IN4MATX 191A. Senior Design Project
- Fall 2018 - IN4MATX 125. Computer Game Development
- Spring 2018 - IC SCI 60. Computer Games and Society
- Winter 2018 - IN4MATX 131. Introduction to Human Computer Interaction

Skills

Research User Interviews, Contextual Inquiry, Surveys, Experimental Design, A/B Testing, Statistical analyses, Personas, Card Sorting, Affinity Diagramming

Coding Python, PyTorch, Java, HTML, CSS, JavaScript, php, R

Service

2020 Associate Chair (AC) - ACM CHI, Late Breaking Work
- As 1AC, recruited external reviewers, wrote meta-reviews, and made recommendations as to whether the LBW should be accepted to CHI 2020
- Completed additional reviews as 2AC.

Industry Experience

2015–2017 **Software Engineer II**, *ThermoFisher Scientific*, Bangalore, India.

- Developed secure, scalable micro-services using Amazon Web Services
- Contributed to UI/UX development by developing Javascript SDKs and user interfaces
- Spot Award for UI development contribution
- Actively contributed to and led sprint,agile activities for the team