

# Anant Mittal

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## Research interests

Human-Computer Interaction, Applied AI & ML, Interactive Systems, Accessibility, Personal Health, Sociotechnical Systems, Communication and Collaboration Systems

## Education

- 2019 – Ongoing     **University of Washington** – Seattle, Washington  
Ph.D. Student in Computer Science  
*Advisor:* James Fogarty  
*Thesis:* Designing Feature-Rich Communication and Collaborative Systems in Accessibility and Health  
*Coursework:* Introduction to Deep Learning, Prototyping Interactive Systems, Artificial Intelligence, Machine Learning, Implementation of Programming Languages
- 2017 – 2019     **University of Michigan** – Ann Arbor, Michigan  
Master of Science in Information (Specialization in Data Science and ML)  
*Advisor:* Christopher Brooks  
*Coursework:* Contextual Inquiry, Introduction to Statistics, Information Retrieval, Computational Data Science, Natural Language Processing, Bayesian Statistics, Networks, Applied Machine Learning, Data Mining, Big Data Analytics
- 2009 – 2013     **Indraprastha University** – New Delhi, India  
Bachelor of Technology in Computer Science

## Publications

- Manuscript in Submission     **SCOPE: Examining Technology-Enhanced Collaborative Care Management of Depression in the Cancer Setting**  
**Anant Mittal**, Tae Jones, Jina Suh, Ravi Karkar, Spencer Williams, Yihao Zheng, Lydia M Andris, Ty W Lostutter, Amy M Bauer, Jesse R Fann, James Fogarty, and Gary Hsieh.

- CHI 2024  
Best Paper Award  
DOI [DOI](#) **MigraineTracker: Examining Patient Experiences with Goal-Directed Self-Tracking for a Chronic Health Condition**  
Yasaman S Sefidgar, Carla L Castillo, Shaan Chopra, Liwei Jiang, Tae Jones, **Anant Mittal**, Hyeyoung Ryu, Jessica Schroeder, Allison Cole, Natalia Murinova, Sean A Munson, and James Fogarty.  
*ACM Conference on Human Factors in Computing Systems.*
- 2024  
DOI [DOI](#) **Mobile App Use among Persons with Fibromyalgia: A Cross-Sectional Survey**  
Jiaxin An, Wei Fan, **Anant Mittal**, Yan Zhang, and Annie T. Chen.  
*The Journal of Pain.*
- ASSETS 2023  
DOI [DOI](#) **Jod: Examining Design and Implementation of a Videoconferencing Platform for Mixed Hearing Groups**  
**Anant Mittal**, Meghna Gupta, Roshni Poddar, Tarini Naik, Seethalakshmi Kuppuraj, James Fogarty, Pratyush Kumar, and Mohit Jain.  
*ACM Conference on Computers and Accessibility.*
- CHI 2023  
PDF [PDF](#) **UW SCOPE: Examining Technology-Enhanced Collaborative Care Management of Depression in the Cancer Setting**  
Tae Jones\*, **Anant Mittal\***, Jina Suh, Ravi Karkar, Lydia Andris, Yihao Zheng, Amy M. Bauer, Ty Lostutter, Jesse Fann, James Fogarty, and Gary Hsieh.  
*CHI 2023 Workshop on Bridging HCI and Implementation Science.*
- CSCW 2019  
Best Paper Award  
DOI [DOI](#) **How Data Scientists Use Computational Notebooks for Real-Time Collaboration**  
April Yi Wang, **Anant Mittal**, Christopher Brooks, and Steve Oney.  
*ACM Conference on Computer-Supported Cooperative Work and Social Computing.*
- LAK 2019  
PDF [PDF](#) **Augmenting Authentic Data Science Environments for Learning Analytics**  
**Anant Mittal** and Christopher Brooks.  
*The International Conference on Learning Analytics & Knowledge.*

## Research experience

- May 2024 –  
Ongoing **Personalized Multi-Agent AI in Knowledge-Intensive Patient-Provider Collaboration**  
Graduate Research Assistant, University of Washington  
Advisor: James Fogarty.  
Exploring LLM-based design opportunities to support patients and behavioral health providers in knowledge-intensive collaborations such as delivering behavioral activation treatments for depression.  
Technology Stack: LLMs (e.g., GPT-4), TypeScript, Python, React, Flask

September 2021 – Ongoing <a href="#">SCOPE Study</a> <a href="#">CHI Workshop</a> <a href="#">GitHub</a>	<b>Technology Enhanced Collaborative Care for Cancer &amp; Depression</b> Graduate Research Assistant, University of Washington Advisors: James Fogarty and Gary Hsieh. <ul style="list-style-type: none"> <li>• Built a web-based patient-provider system for providers and people with cancer to manage their treatment and depression.</li> <li>• Deployed the platform for a clinical trial in 6 cancer clinics and conducted 45 interviews (24 with patients and 21 with behavioral health providers) to understand onboarding, usability, and implementation challenges.</li> </ul> Technology Stack: Typescript, Python, React, Flask, Amazon Web Services
September 2023 – June 2024 <a href="#">Echopype</a> <a href="#">SciPy Tutorial</a>	<b>Scientific Software Engineering Center, eScience Institute</b> Graduate Research Assistant, University of Washington <ul style="list-style-type: none"> <li>• Optimized code parallelization and increased the ability to process larger datasets in Echopype, an open-source Python package for ocean sonar data processing.</li> <li>• Led a tutorial on generative AI and retrieval-augmented generation for SciPy 2024</li> </ul> Technology Stack: Python, Open Language Model (OLMo), LangChain, Quadrant Vector Store, Hugging Face
June 2022 – September 2022 <a href="#">ASSETS 2023</a> <a href="#">GitHub</a>	<b>Research Intern, Microsoft Research, India</b> Advisors: Mohit Jain and Pratyush Kumar. <ul style="list-style-type: none"> <li>• Designed and built a videoconferencing platform for mixed-hearing groups, with features such as customizable video tiles, preset feedback messages, and gesture recognition.</li> <li>• Conducted user studies with 34 participants including 18 d/Deaf or hard of hearing participants, 10 hearing participants, and 6 sign language interpreters</li> </ul> Technology Stack: TypeScript, React, Node.js, Express, Socket.IO, Google MediaPipe, Azure Communication Services
August 2020 – July 2021 <a href="#">Prototype 1</a> <a href="#">Prototype 2</a>	<b>Executive Functions + Math</b> Graduate Research Assistant, Enlearn & University of Washington Advisors: Yun-En Liu and Zoran Popović. <ul style="list-style-type: none"> <li>• Designed and prototyped math learning prototypes to engage cognitive processes such as working memory, cognitive flexibility, and inhibition control for students.</li> <li>• Conducted multiple experiments on Amazon Mechanical Turk for evaluation.</li> </ul> Technology Stack: JavaScript, Vue.js

- September 2019 – January 2021 **Scientific Discovery through Games, Center for Game Science**  
 Graduate Research Assistant, University of Washington  
 Advisor: Zoran Popović.  
 Applied machine learning and data science methods to maximize scientific discovery in Mozak, a citizen science game about neuroscience in which players reconstructed neurons and captured their morphology.  
 Technology Stack: Python, Pandas, scikit-learn, NumPy, Jupyter Notebooks
- September 2017 – April 2019 **Augmenting Authentic Data Science Environments for Learning Analytics**  
 Graduate Research Assistant, University of Michigan  
 Advisor: Christopher Brooks.  
[LAK 2019](#)  
[CSCW 2019](#)  
[Poster](#)  
 Built extensions and infrastructure for Project Jupyter to capture the learning behavior of data science students and crowdsource questions and datasets on Coursera.

## Teaching experience

### Teaching Assistant, University of Washington

- Spring 2022 CSE 440 Introduction to Human-Computer Interaction
- Winter 2022 CSE 510 Advanced Topics in Human-Computer Interaction
- Autumn 2021 CSE 583 Software Development for Data Scientists
- Winter 2020 CSE 481D Games Capstone Software

### Graduate Student Instructor, University of Michigan

- Winter 2018 SI 485 Information Analytics Capstone Project

## Industry experience

- May 2018 - July 2018 **AdmitHub (now Mainstay)**, Natural Language Understanding Intern – Boston, MA  
 Extended AdmitHub's in-house chatbot development environment to help college students find relevant scholarships.
- September 2014 - March 2016 **Adobe Systems**, Engineering Services Consultant – Bengaluru, India  
 Built custom big data solutions for Adobe's digital marketing suite clients  
 Technology Stack: LAMP (Linux, Apache, MySQL, and PHP), JavaScript, AngularJS

- October 2013 - **Leadgrab**, Software Engineer – Bengaluru, India  
 August 2014 Developed lead generation websites and wrote matching algorithms to optimize lead supply for clients  
 Technology Stack: LAMP (Linux, Apache, MySQL, and PHP), JavaScript
- June 2012 - **IKP Centre for Technologies in Public Health (ICTPH)**, Software Engineering  
 August 2012 Intern – Thanjavur, India  
 ICTPH was a non-profit think tank that provided accessibility to healthcare services in rural areas of South India.  
 Built features for their health management information system to automate generating graphical reports and visualizations, supporting stakeholders in understanding patient data.  
 Technology Stack: LAMP (Linux, Apache, MySQL, and PHP), JavaScript

## Consulting & volunteering experience

- September 2016 **Aam Aadmi Party (Delhi Government)**, Technical Advisor – New Delhi, India  
 - June 2017 Advised government stakeholders on technology for several public-facing projects such as outcome budget and reading mela.
- September 2015 **Prof. Aprajit Mahajan (UC Berkeley)**, Consultant – New Delhi, India  
 - August 2016 Supported development of tools to identify fraudulent firms in Delhi
- December 2014 **Swasth Foundation**, Application Developer – Mumbai, India  
 - June 2016 Swasth is a non-profit social enterprise that provides access to affordable and high-quality healthcare services to urban poor in Mumbai, India. Developed a patient-provider app to target Swasth patients and doctors.

## Technical skills

Full stack engineering, experiment design, qualitative and quantitative data analysis, machine learning, natural language processing, data visualization, relational and non-relational databases, Python, TypeScript, JavaScript, Next.js, React, R, Project Jupyter, SQL, Amazon Web Services, Microsoft Azure