Anant Mittal

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Current Role

April 2025 - Ongoing

Scientific Software Engineering Center, eScience Institute – Seattle, WA
Senior Research Software Engineer, University of Washington
Manager: Vani Mandava

• Developing AI-powered human-centered tools and applications that accelerate scientific research and discovery across multiple disciplines.

• **Protein Design Pipelines:** Designing and building interfaces in collaboration with Baker Lab at the University of Washington to optimize protein design workflows that integrate state-of-the-art design platforms (e.g., ESM3, RFdiffusion, MPNN, Evo 2, Rosetta) with advanced structure prediction and filtering techniques (e.g., AlphaFold2, AlphaFold3, PLACER, Rosetta).

• **Homelessness Research Using Respondent-Driven Sampling:** Designing and building a platform in collaboration with the University of Washington and King County Regional Homelessness Authority (KCRHA), that supports volunteers and administrators to collect accurate survey data, track referrals, and generate population estimates more effectively than traditional Point-In-Time (PIT) counts.

Education

2019 – 2025

University of Washington – Seattle, WA
Ph.D. in Computer Science & Engineering
Advisor: James Fogarty
Thesis: Designing for Communication, Collaboration, and Coordination 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, MI
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

CSCW 2025
DOI

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, Nicole Bates, Ty W. Lostutter, Amy M. Bauer, Jesse R. Fann, James Fogarty, and Gary Hsieh.
ACM Conference on Computer-Supported Cooperative Work and Social Computing.

CHI 2024
Best Paper Award
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

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

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

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

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

Augmenting Authentic Data Science Environments for Learning Analytics
Anant Mittal and Christopher Brooks.
The International Conference on Learning Analytics & Knowledge.

Research Experience

September 2021 – March 2025
CSCW 2025
SCOPE Study
CHI Workshop
GitHub

Technology Enhanced Collaborative Care for Cancer & Depression
Graduate Research Assistant, University of Washington
Advisors: James Fogarty and Gary Hsieh.
• Built a web-based patient-provider system for providers and people with cancer to manage their treatment and depression.
• 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.
Technology Stack: Typescript, Python, React, Flask, Amazon Web Services

September 2023 – June 2024
Echopype
SciPy Tutorial

Scientific Software Engineering Center, eScience Institute
Graduate Research Assistant, University of Washington
• Optimized code parallelization and increased the ability to process larger datasets in Echopype, an open-source Python package for ocean sonar data processing.
• Led a tutorial on generative AI and retrieval-augmented generation for SciPy 2024
Technology Stack: Python, Open Language Model (OLMo), LangChain, Quadrant Vector Store, Hugging Face

June 2022 – September 2022
ASSETS 2023
GitHub

Research Intern, Microsoft Research, India
Advisors: Mohit Jain and Pratyush Kumar.
• Designed and built a videoconferencing platform for mixed-hearing groups, with features such as customizable video tiles, preset feedback messages, and gesture recognition.
• Conducted user studies with 34 participants including 18 d/Deaf or hard of hearing participants, 10 hearing participants, and 6 sign language interpreters
Technology Stack: TypeScript, React, Node.js, Express, Socket.IO, Google MediaPipe, Azure Communication Services

August 2020 – July 2021

Executive Functions + Math
Graduate Research Assistant, Enlearn & University of Washington
Advisors: Yun-En Liu and Zoran Popović.
• Designed and prototyped math learning prototypes to engage cognitive processes such as working memory, cognitive flexibility, and inhibition control for students.
• Conducted multiple experiments on Amazon Mechanical Turk for evaluation.
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
LAK 2019
CSCW 2019
Poster

Augmenting Authentic Data Science Environments for Learning Analytics
Graduate Research Assistant, University of Michigan
Advisor: Christopher Brooks.
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

Winter 2025 — CSE 510 Advanced Topics in Human-Computer Interaction

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 - August 2014

Leadgrab, Software Engineer – Bengaluru, India
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 - August 2012

IKP Centre for Technologies in Public Health (ICTPH), Software Engineering 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 - June 2017

Aam Aadmi Party (Delhi Government), Technical Advisor – New Delhi, India
Advised government stakeholders on technology for several public-facing projects such as outcome budget and reading mela.

September 2015 - August 2016

Prof. Aprajit Mahajan (UC Berkeley), Consultant – New Delhi, India
Supported development of tools to identify fraudulent firms in Delhi.

December 2014 - June 2016

Swasth Foundation, Application Developer – Mumbai, India
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