

Vineet Pandey

Assistant Professor

Kahlert School of Computing, University of Utah

Website: <https://vineetp13.github.io/>

50 Central Campus Drive,
Salt Lake City, UT 84112 USA

+1 858 366 5701
vineet.pandey@utah.edu

Research Interests

Human-centered computing, human-computer interaction, social computing, citizen science, digital health.

My primary research interests are in developing **human-centered systems** especially applied to citizen science and digital health. Such tools intervene at individual, social, and institutional levels via, *for instance*, smartphone-based measures of human motor and cognitive performance; remote health assessments for neurological disorder communities; and faster decision-making in clinical trials.

Professional Appointments

University of Utah

Assistant Professor at the Kahlert School of Computing

07/2023-

Massachusetts Institute of Technology

Post-Doctoral Associate at the MIT VIS group at CSAIL

08/2022 – 06/2023

Harvard University

Post-Doctoral Fellow at the Intelligent Interaction Systems Group at SEAS

Affiliate at Center for Research on Computation and Society

11/2019 – 06/2022

Massachusetts General Hospital

Non-Employee Researcher at the Digital Phenotyping Group in Neurology

11/2019 – 06/2022

UC San Diego

Research Assistant at the Department of Computer Science & Engineering

08/2013 – 10/2019

Microsoft Research

Research Intern at Cipherbase team, Microsoft Research, Redmond

06/2014 – 09/2014

Advanced Technology Group, NetApp

Member of Technical Staff

08/2011 – 05/2013

Education

Post-Doctoral Training

Massachusetts Institute of Technology

Mentor: Arvind Satyanarayan, Associate Professor of Computer Science

09/2022 – 06/2023

Post-Doctoral Training

Harvard University

Mentor: Krzysztof Z. Gajos, Professor of Computer Science

11/2019 – 06/2022

Ph.D. in Computer Science & Engineering

2013 – 2019

University of California San Diego, La Jolla, CA

Thesis: Citizen-led Work using Social Computing and Procedural Guidance

School of Engineering Henry Booker Award for Exemplary Ethical Engineering

Advisor: Scott Klemmer, Professor of Cognitive Science & Computer Science

Committee members: Don Norman, Jim Hollan, Rob Knight, Laurel Riek

Bachelor's Program

2006 – 2011

Bachelor of Engineering (Honors), Computer Science

Birla Institute of Technology & Science (BITS), Pilani, India

HONORS AND AWARDS

School of Engineering Exemplary Ethical Engineering, UC San Diego, 2019

First Prize in Posters at Personal Health Data workshop, UC San Diego. 2018.

Honorable Mention in Innovation and Teamwork, NetApp CTO Awards. 2012.

Accepted for Bachelors in Statistics at Indian Statistical Institute, Kolkata. 2006. (30 students nationwide)

National Talent Search Scholar, 2004. (750 students nationwide)

PUBLICATIONS

Students primarily supervised by me at the University of Utah are underlined; other Utah students are italic.

♦ indicates one of the four most important publications. Number of citations are updated as of June 17, 2024

Journal Papers

1. Nicole M. Eklund, Jessey Ouillon, **Vineet Pandey**, Christopher D Stephen, Jeremy D Schmahmann, Jeremy Edgerton, Krzysztof Z Gajos, Anoopum S Gupta, *Real-life ankle submovements and computer mouse use reflect patient-reported function in adult ataxias*, Brain Communications, Volume 5 Issue 2, 2023. #Citations = 3, Impact Factor = 3.5
2. **Vineet Pandey**, Nergis C. Khan, Anoopum S Gupta, Krzysztof Z Gajos, *Accuracy and Reliability of At-Home Quantification of Motor Impairments Using a Computer-Based Pointing Task with Children with Ataxia-Telangiectasia*, ACM Transactions on Accessible Computing (TACCESS), 2023. #Citations = 0, Impact Factor = 2.4
3. Nergis C. Khan, **Vineet Pandey**, Anoopum Gupta, Krzysztof Gajos, *Free-living motor activity monitoring in ataxia-telangiectasia*, The Cerebellum Issue#3, 2021 ♦ #Citations = 23, Impact Factor = 3.5
4. Daniel McDonald, Rob Knight, **American Gut Consortium**, *American gut: an open platform for citizen science microbiome research*, American Society for Microbiology mSystems, 2018. #Citations = 669, Impact Factor = 6.4
5. Gerth S. Brodal, Mark Greve, **Vineet Pandey**, S. Srinivasa Rao, *Integer Representations towards Efficient Counting in the Bit Probe Model*, Journal of Discrete Algorithms, 2014. #Citations = 10

Papers in Preparation for Rigorously Reviewed Conferences

1. Nastaran Jadidi, **Vineet Pandey**, *A spectrum of stance: How non-expert communities communicate with institutional experts*, ACM SIGCHI Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), 2025. (Due July 02, 2025)
2. **Vineet Pandey**, Arvind Satyanarayan, Graham M. Jones, *An ecosystem of evidence: How citizen scientists complement, contest, and contextualize institutional science*, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), 2025. (Due Sep 12, 2024) ♦

Papers in Rigorously Reviewed Conferences

1. **Vineet Pandey**, Tushar Koul, Chen Yang, Mad Price Ball, Bastian Greshake Tzovaras, Daniel McDonald, Rob Knight, Scott Klemmer. *Galileo: Citizen-led Experimentation using a Social Computing System*, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), 2021. #Citations = 8 ♦
2. **Vineet Pandey**, Justine Debelius, Embriette Hyde, Tomasz Kosciolk, Rob Knight, Scott Klemmer, *Docent: Transforming Personal Intuitions to Scientific Hypotheses through Content Learning and Process Training*, ACM Conference on Learning @ Scale, 2018. #Citations=17
3. **Vineet Pandey**, Amnon Amir, Justine Debelius, Embriette Hyde, Tomasz Kosciolk, Rob Knight, Scott Klemmer, *Gut Instinct: Creating Scientific Theories with Online Learners*, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), 2017. #Citations=33 ♦
4. Arvind Arasu, Ken Eguro, Raghav Kaushik, Donald Kossmann, Pingfan Meng, **Vineet Pandey**, Ravi R., *Concerto: A High Concurrency Key-Value Store with Integrity*, ACM Special Interest Group on Management of Data, SIGMOD, 2017. #Citations=69
5. Catherine Hicks, **Vineet Pandey**, Ailie Fraser, Scott Klemmer, *Framing Feedback: Choosing Review Environment Features that Support High Quality Peer Assessment*, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), 2016. #Citations=68.
6. Gerth S. Brodal, Mark Greve, **Vineet Pandey**, S. Srinivasa Rao, Theory and Applications of Models of Computation 2011, Integer Representations towards Efficient Counting in the Bit Probe Model. #Citations= 3

Peer-Reviewed Workshop Publications and Conference Short Papers/Extended Abstracts

1. Katherine Burke, Zoe Scheier, Alison Clark, Amrita Iyer, Roland Brown, **Vineet Pandey**, Mackenzie Keegan, Sheena Chew, Krzysztof Gajos, Kathryn Connaghan, Evan Remington, Anoopum Gupta, Stephen Johnson, Kelley Erb, James Berry. *Using Digital Quantitative Monitoring to Quantify Function and Speech in Amyotrophic Lateral Sclerosis (ALS)*, MUSCLE & NERVE, Volume 66.
2. **Vineet Pandey**, Jesse Ouillon, Krzysztof Z. Gajos, Anoopum S. Gupta, *At-home use of a computer-based tool for estimating motor impairment severity*, Annual Health Data Science Symposium (Smartphones, Wearables, and Health), Harvard University, 2021
3. **Vineet Pandey**, Anoopum Gupta, Krzysztof Gajos, *From novices to co-pilots: Fixing the limits on scientific knowledge production by accessing or building expertise*, Workshop on Computing within Limits (LIMITS), 2020
4. Zoe Scheier, Alison P. Clark, Mackenzie Keegan, Kelley Erb, Evan Remington, Sheena Chew, Roland Brown, Jesse Ouillon, **Vineet Pandey**, Krzysztof Z. Gajos, Anoopum S. Gupta, Katherine M. Burke, James D. Berry, *Using Active Digital Phenotyping to Quantify Function and Cognition in Amyotrophic Lateral Sclerosis (ALS)*, 33rd International Symposium on ALS/MND, 2021.
5. **Vineet Pandey**, *Beyond Data Tracking: A Proposal to Design Health Interfaces for Learning and Sharing*, Workshop on Healthy Interfaces (HEALTHI), ACM Conference on Intelligent User Interfaces, 2021.
6. **Vineet Pandey**, Nergis C. Khan, Anoopum S. Gupta, Krzysztof Z. Gajos, *Neurological assessments without clinical supervision for a rare disease*, AMIA Workgroup on Interactive Systems in Health (WISH), 2020.
7. **Vineet Pandey**, *Improving Health Outcomes by Integrating Personal Knowledge, Community, and Data*, Workshop on Body As Starting Point at ACM CHI, 2019.
8. Sam Lau, Tricia Ngoon, **Vineet Pandey**, Scott Klemmer, *Experiment Reconstruction Reduces Fixation on Surface Details of Explanations*, ACM Creativity and Cognition, 2019. #Citations=2
9. **Vineet Pandey**, *Gut Instinct: Creating Scientific Theories with Online Communities*, Doctoral Consortium at ACM CSCW, 2018.
10. Daniel McDonald, Alexander Aksenov, Alexey Melnik, Pieter Dorrestein, Larry Smarr, Rashmi Sinha, **Vineet Pandey**, Scott Klemmer, Rob Knight, *Transitioning the American Gut Project to the Microsetta*

Initiative, American Society of Microbiology, 2018

11. **Vineet Pandey**, Scott Klemmer, Amnon Amir, Justine Debelius, Embriette Hyde, Tomasz Kosciolk, Rob Knight, *Integrating Citizen Science with Online Learning to Ask Better Questions*, AAAI Conference on Human Computation and Crowdsourcing (HCOMP), 2016
12. **Vineet Pandey**, Krishnendu Chatterjee, *Game-Theoretic Models Identify Useful Principles for Peer Collaboration in Online Learning Platforms*, ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), 2016. #Citations=4
13. **Vineet Pandey**, *Education Across Borders: Technology Supported Mentoring and Teambuilding*, ACM CHI Workshop: HCI Across Borders, 2016
14. **Vineet Pandey**, Yasmine Kotturi, C. Kulkarni, M. Bernstein, S. Klemmer, *Connecting Stories and Pedagogy Increases Participant Engagement in Discussions*. ACM Learning@Scale, 2015. #Citations=3

Selected Abstracts and Commentaries

1. Nastaran Jadidi, **Vineet Pandey**, *A spectrum of stance: How non-expert communities communicate with institutional experts on digital platforms*, Digital Humanities Utah, 2024.
2. Tianyin Xu, **Vineet Pandey**, Scott Klemmer. An HCI View of Configuration Problems, *arXiv*, 2016. #Citations=18

TALKS

Invited Talks

Multimodal Reasoning in Online Communities, Verbal/Visual Evidence workshop, Language and Technology Lab, Massachusetts Institute of Technology, 2023

Creating Scientific Theories with Online Communities, Session on Citizen Microbiology: Moving Beyond Crowdsourcing to Active, Participatory Science by the Public, American Society of Microbiology, San Francisco, CA, USA. 2019

Creating Scientific Theories with Online Communities, Panel on The Design Lab: Applying the Wisdom of the University to Societal Issues, Showcase for American Academy of Arts and Sciences. San Diego, CA, 2019

Peer-to-peer Online Systems that Enable People to Evaluate their Ideas, Innovation Lab Workshop, Harvard Business School, MA, 2018

Paper/Poster Talks

ACM Conference on Human Factors in Computing Systems (CHI). Virtual. 2021

Citizen Science Association, Raleigh, NC, USA. 2019

ACM Learning@Scale, London. 2018

ACM Conference on Human Factors in Computing Systems (CHI), Denver, CO, USA. 2017

ACM Conference On Computer- Supported Cooperative Work And Social Computing (CSCW) Doctoral Consortium, NYC. 2018

ACM Intelligent User Interfaces (IUI) workshop: Healthy Interfaces, Virtual. 2021

AMIA Workgroup on Interactive Systems in Health (WISH). Virtual. 2020

ACM Conference On Computer- Supported Cooperative Work And Social Computing . New York City's Hudson River, NJ. 2018

AAAI Conference on Human Computation and Crowdsourcing (HCOMP). Austin, TX. 2016

ACM Conference On Computer- Supported Cooperative Work And Social Computing . San Francisco, CA. 2016.

Digestive Disease Week, Chicago, IL. 2017

Health Data Exploration. UC San Diego. 2017. First Prize in Posters

Research Expo. UC San Diego, CA. 2016, 2017, 2018.

Group/Lunch Talks

IIT Delhi, Jan 2023

Mass General Hospital Ataxia Center Symposium. 2021

Stanford HCI. 2018

University of Chicago. 2018

MIT Teaching Systems Lab. 2018

Precision Medicine Initiative, Scripps Research Translational Institute, La Jolla, CA, USA. 2018.

South Asia Initiative, UC San Diego. 2018

DISCLOSURES, PATENTS ISSUED, AND SOFTWARE DISTRIBUTED

1. Controlling Verification of Key-Value Stores, Arvind Arasu, Ken Eguro, Raghav Kaushik, Donald Kossmann, Pingfan Meng, **Vineet Pandey**, Ravi R. (Microsoft Research). 2018. #Citations=29
2. **Vineet Pandey**, Chhavi Sharma, Ranjit Kumar, Kaladhar Voruganti, Parag Deshmukh, Migrating data from legacy storage systems to object storage systems, (NetApp, Inc.). 2014. #Citations=23

TEACHING AND MENTORSHIP

Courses Taught

CS 3540 — Designing Human-Centered Systems, University of Utah, Fall 2023 (N=107 students).

Instructor. Undergraduate course designed for CS and Software Development majors. Introduction to Human-computer interaction with conceptual basis in human cognition, multiple forms of prototyping, and programming assignments. Course effectiveness = 4.55/6; Instructor effectiveness = 4.91/6 (Co-taught with Professor Jason Wiese)

CS 5968, 6968 — Designing Citizen Science Systems, University of Utah, Spring 2023. (N=20 students)

Instructor. Graduate research course designed for CS and DS students. <https://vineetp13.github.io/DesigningScience.html>

Research in Human-Computer Interaction Design, UC San Diego, 2014

Teaching assistant. Graduate level. Supervision of class material and research projects. (N=31 students)

Human-Computer Interaction Design, UC San Diego, 2015

Teaching assistant. Undergraduate level. Supervision of class material and lab assignments (for N=100 students) and guiding quarter-long research projects in design studio. (N=30 students)

Introduction to Design, UC San Diego, 2015

Teaching assistant. Undergraduate level. Supervision of class material, assignments, and projects. (N=42 students)

Introduction to Machine Learning, UC San Diego, 2015

Teaching assistant. Undergraduate level. Supervision of class material and problem sets. (N=70 students)

Digital Electronics and Computer Organisation course at BITS Pilani, BITS Pilani, 2010

Professional Assistant (equivalent to Teaching Assistant). Undergraduate level. Supervision of problem sets and examinations.

Introduction to Machine Learning, UC San Diego, 2015

Teaching assistant. Undergraduate level. Supervision of class material and problem sets. (N=70 students)

Current Ph.D. Students

Mutaz Hennawi, 2024-

Janet Ikhile, 2023-

Nastaran Jadidi, 2023-

M.S. Students - Advised at Utah

Sujit Kumar Kamaraj, independent study (two semesters + summer), MS '25

Naman Rastogi, independent study (one semester), MS '25

Darshan Daniel Shimpi, independent research (one semester), Dropped out

I have worked on at least a semester-long project with each of the MS students listed above. I am funding one of these students as RAs (over Summer 2024).

M.S. Students - Project Committee at Utah

Semil Jain, MS Project, MS '24

Undergraduate Students Advised at Utah

Brennan Cook, 2023-2024 (BS Thesis), BS '24

Logan Wood, Engineering Scholars Program (Spring 24), Price College of Engineering, BS '27

Kunal Kamtekar, Engineering Scholars Program (Spring 24), Price College of Engineering, BS '27

PhD Committees at Utah

Noelle Brown (Ethics in Computing); Advisor: E.Wiese

Maxim Lisnic (Data-driven Misinformation), 2022-2027, Chairs: Kogan, Lex

Mentored Students at Harvard

Auxiliary Supervisor for Undergraduate Thesis for Aleksandra Koralczyk, Lodz University of Technology, Poland; Visiting Student at Harvard University

Thesis Advisor Committee member for Katharina Kloppenborg, , Center for Research and Interdisciplinarity, Université de Paris (UdP)

Mentored Students at UC San Diego

Sam Lau, Ph.D.'22, Cognitive Science (with T. Ngoon) → Lecturer at UCSD Computer Science/data science

Tushar Koul , M.S. Mentor, UCSD Computer Science → TaskRabbit

SERVICE

Department and university Service

Graduate Students Admissions committee, 2022-23 and 2023-24

Teaching Area co-ordinator, Human-centered Computing (Fall 2023-)

Area research talk, Human-centered Computing (Fall 2023)

Undergraduate Research Mentor Panel, Office of Undergraduate Research. Spring 2024

Undergraduate Research Tour, Office of Undergraduate Research. Spring 2024

Mentor, Engineering Scholar, Price College of Engineering. Spring 2024

Program Committees

ACM Conference on Human Factors in Computing Systems, CHI 2022

ACM Conference On Computer- Supported Cooperative Work And Social Computing, CSCW 2022

ACM SIGCAS Computing and Sustainable Societies, COMPASS 2022

ACM Conference on Human Factors in Computing Systems, CHI 2021

ACM Conference On Computer- Supported Cooperative Work And Social Computing, CSCW 2021

ACM Designing Interactive Systems, DIS 2021

ACM Creativity & Cognition, C&C 2021

LIMITS workshop at ICT4Sustainability 2021

ACM Conference on Human Factors in Computing Systems, CHI (Extended Abstracts) 2021

ACM Creativity & Cognition, C&C 2019

ACM Learning@Scale, L@S 2019

Reviewing

Conference/Journal

Reviewer responsibilities include writing full reviews of papers

American Medical Informatics Association Annual Symposium, AMIA 2021

ACM SIGACCESS Conference on Computers and Accessibility, ASSETS 2021

ACM Conference on Human Factors in Computing Systems, CHI 2024

ACM Conference on Human Factors in Computing Systems, CHI 2020

ACM Conference On Computer- Supported Cooperative Work And Social Computing, CSCW 2020

Symposium of the Workgroup on Interactive Systems in Health, WISH 2020

ACM Designing Interactive Systems, DIS 2019

ACM Designing Interactive Systems - Extended Abstracts, DIS 2019

ACM Conference On Computer- Supported Cooperative Work And Social Computing, CSCW 2019, 2018

ACM Conference on Human Factors in Computing Systems, CHI 2018, 2017

Grant Review Panels

National Science Foundation. Office of Advanced Cyberinfrastructure Research Experiences for Undergraduates (NSFREU). 2023.

Educational Outreach

Lecturer, Human-centered design and paper prototyping, STEM Community Alliance Program (STEMCAP), Spring 2023

Speaker, Summer Summit by Student Initiated Access Programs and Services (SIAPS) at UC San Diego. 2017.

Reviewer, Early Research Scholars Program, UC San Diego. 2018.
Reviewer, Gandhi Scholarship Selection Committee. San Diego. 2016.
Organizer, Alumni Research Talks, BITS Pilani, India. 2011, 2012, 2013.
Participant, Workshop Uniting the Californias (WUC). 2014.
Organizer, Visit day for HCI students, UC San Diego, 2015-18.

President, Association of Indian Graduate Students, UC San Diego, 2015-2016

Research Outreach

Ataxia-telangiectasia (A-T) Children's Project
San Diego Fermentation Festival, San Diego, CA. 2019
Citizen Science Expo, San Diego, CA. 2019
Queso Diego, Fermenter's Club (Beer and cheese communities). 2018
MyLymeData, San Ramone, CA. 2018
Nerd Nite, San Diego, CA. 2018
Maker Faire, San Diego, CA. 2017

June 18, 2024