Vineet Pandey, Ph.D.

858-366-5701 vineet@seas.harvard.edu `vineetp13.github.io`

Research Interests

Broadly-trained **Human-computer interaction researcher** with expertise in **social computing** and experience in application areas of **accessibility** and **digital health**. Research skills include need-finding, co-design/participatory design, low/high-fidelity prototyping, longitudinal deployment, quantitative methods, and qualitative inquiry. Collaborators include domain experts from microbiology, neurology, clinical research, and learning science. Author of 13 publications with 6 as first author. Deployed research systems with people with neurological disorders, open science communities, and citizen science projects.

RESEARCH EXPERIENCE

2019- **Postdoctoral Fellow**, Computer Science, Harvard University, MA, USA
Affiliate, Center for Research on Computation and Society
Faculty Mentor: Krzysztof Z. Gajos, PhD
Professor of Computer Science at the School of Engineering and Applied Sciences

2019- **Non-Employee Researcher**, Massachusetts General Hospital, Boston, MA, USA
Faculty Mentor: Anoopum Gupta, MD, PhD (Neurology, Harvard Medical School)

2014 **Research Intern**, Microsoft Research, Redmond, WA, USA
Mentor: Arvind Arasu, PhD

EDUCATION

2019 **Ph.D. in Computer Science & Engineering**
University of California San Diego, La Jolla, CA
School of Engineering Henry Booker Award for Exemplary Ethical Engineering

Thesis: Citizen-led Work using Social Computing and Procedural Guidance
Advisor: Scott Klemmer, PhD, Professor, Cognitive Science & Computer Science and Engineering
Committee members: Don Norman, Jim Hollan, Rob Knight, Laurel Riek

2011 **Bachelor of Engineering (Honors), Computer Science**
BITS Pilani, India

Thesis: Integer Representations towards Efficient Counting in the Bit Probe Model
Advisor: Srinivasa S. Rao (Seoul National University, South Korea)

PUBLICATIONS AND PATENTS

Selected First author

1   Galileo: Citizen-led Experimentation using a Social Computing System · *ACM CHI 2021* · **Vineet Pandey**, Tushar Koul, Chen Yang, Mad Price Ball, Bastian Greshake Tzovaras, Daniel McDonald, Rob Knight, Scott Klemmer.

2   At-home Use of a Computer-based Pointing Task Accurately and Reliably Estimates Motor Impairments · **In Submission** (Postdoctoral research) · **Vineet Pandey**, Nergis C. Khan, Anoopum S Gupta, Krzysztof Z Gajos

3 Docent: Transforming Personal Intuitions to Scientific Hypotheses through Content Learning and Process Training · *ACM Learning@Scale 2018* · **Vineet Pandey**, Justine Debelius, Embriette Hyde, Tomasz Kosciolek, Rob Knight, Scott Klemmer

Additional Published Research

4 Free-living motor activity monitoring in ataxia-telangiectasia · *2021 The Cerebellum (June, Issue#3)* · Nergis C. Khan, **Vineet Pandey**, Anoopum Gupta, Krzysztof Gajos

5 From novices to co-pilots: Fixing the limits on scientific knowledge production by accessing or building expertise · *LIMITS 2020* · **Vineet Pandey**, Anoopum Gupta, Krzysztof Gajos

6 American gut: an open platform for citizen science microbiome research · *American Society for Microbiology mSystems 2018* · Daniel Mcdonald, Rob Knight, **American Gut Consortium**

7 Gut Instinct: Creating Scientific Theories with Online Learners · *ACM CHI 2017* · **Vineet Pandey**, Amnon Amir, Justine Debelius, Embriette Hyde, Tomasz Kosciolek, Rob Knight, Scott Klemmer

8 Framing Feedback: Choosing Review Environment Features that Support High Quality Peer Assessment · *ACM CHI 2016* · Catherine Hicks, **Vineet Pandey**, Ailie Fraser, Scott Klemmer

9 An HCI View of Configuration Problems · *arXiv (NOT peer-reviewed)* · Tianyin Xu, **Vineet Pandey**, Scott Klemmer

10 Concerto: A High Concurrency Key-Value Store with Integrity · *ACM SIGMOD 2017* · Arvind Arasu, Ken Eguro, Raghav Kaushik, Donald Kossmann, Pingfan Meng, **Vineet Pandey**, Ravi R.

11 Integer Representations towards Efficient Counting in the Bit Probe Model · *Journal of Discrete Algorithms 2014, Theory and Applications of Models of Computation 2011* · Gerth S. Brodal, Mark Greve, **Vineet Pandey**, S. Srinivasa Rao.

Manuscripts in Preparation

a Understanding Clinician Perspectives to Identify Opportunities for Telemedicine Beyond COVID-19 · Hannah Studd, Krzysztof Z. Gajos, Anoopum Gupta, **Vineet Pandey**, Maia Jacobs

b Constructive Activities for People to Develop Their Creative Scientific Insights · **Vineet Pandey**, Tricia Ngoon, Sam Lau

Short Papers (Includes Abstracts, Extended Abstracts, and Workshop papers)

12 Home speech and coordination measurement in spinocerebellar ataxias and multiple system atrophy · *2021 International Congress for Ataxia Research (ICAR)* · Nicole M. Eklund, Jessey Ouillon, **Vineet Pandey**, Akansha Pandey, Christopher D. Stephen, Jeremy D. Schmahmann, Krzysztof Z. Gajos, Jeremy Edgerton, Anoopum S. Gupta

13 At-home use of a computer-based tool for estimating motor impairment severity · *2021 Annual Health Data Science Symposium at Harvard (Smartphones, Wearables, and Health)* · **Vineet Pandey**, Jessey Ouillon, Krzysztof Z. Gajos, Anoopum S. Gupta

14 Using Active Digital Phenotyping to Quantify Function and Cognition in Amyotrophic Lateral Sclerosis (ALS) · *33rd International Symposium on ALS/MND* · Zoe Scheier, Alison P. Clark, Mackenzie Keegan, Kelley Erb, Evan Remington, Sheena Chew, Roland Brown, Jessey Ouillon, **Vineet Pandey**, Krzysztof Z. Gajos, Anoopum S. Gupta, Katherine M. Burke, James D. Berry

15 Beyond Data Tracking: A Proposal to Design Health Interfaces for Learning and Sharing · **Vineet Pandey** · *2021 ACM IUI Workshop: Healthy Interfaces (HEALTHI)*

16 Neurological assessments without clinical supervision for a rare disease · **Vineet Pandey**, Nergis C. Khan, Anoopum S. Gupta, Krzysztof Z. Gajos · *2020 AMIA Workgroup on Interactive Systems in Health (WISH)*

17 Improving Health Outcomes by Integrating Personal Knowledge, Community, and Data · **Vineet Pandey** · *2019 ACM CHI Workshop: Body As Starting Point*

18 Reconstruction Reduces Fixation on Surface Details of Explanations · Sam Lau, Tricia Ngoon, **Vineet Pandey**, Scott Klemmer · *2019 ACM Creativity and Cognition*

19 Gut Instinct: Creating Scientific Theories with Online Communities · **Vineet Pandey** · *2018 CSCW Doctoral Consortium*

20 **Transitioning the American Gut Project to the Microsetta Initiative** · Daniel McDonald, Alexander Aksenov, Alexey Melnik, Pieter Dorrestein, Larry Smarr, Rashmi Sinha, **Vineet Pandey**, Scott Klemmer, Rob Knight · *2018 American Society of Microbiology*

21 Integrating Citizen Science with Online Learning to Ask Better Questions · **Vineet Pandey**, Scott Klemmer, Amnon Amir, Justine Debelius, Embriette Hyde, Tomasz Kosciolek, Rob Knight · *HCOMP 2016*

22 Game-Theoretic Models Identify Useful Principles for Peer Collaboration in Online Learning Platforms · **Vineet Pandey**, Krishnendu Chatterjee · *2016 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*

23 Education Across Borders: Technology Supported Mentoring and Teambuilding · **Vineet Pandey** · *2016 ACM CHI Workshop: HCI Across Borders*

24 Connecting Stories and Pedagogy Increases Participant Engagement in Discussions · **Vineet Pandey**, Yasmine Kotturi, C. Kulkarni, M. Bernstein, S. Klemmer · *2015 ACM Learning@Scale*

Patents

1 Controlling Verification of Key-Value Stores. Arvind Arasu, Ken Eguro, Raghav Kaushik, Donald Kossmann, Pingfan Meng, Vineet Pandey, Ravi R. (Microsoft Research). 2018.

2 Migrating data from legacy storage systems to object storage systems. Vineet Pandey, Chhavi Sharma, Ranjit Kumar, Kaladhar Voruganti, Parag Deshmukh (NetApp, Inc.). 2014.

PRESENTATIONS

Invited Talks

American Society of Microbiology, San Francisco, CA, USA. 2019

Showcase for American Academy of Arts and Sciences. San Diego, CA, USA. 2019

Innovation Lab Workshop. Harvard Business School, MA, USA. 2018

Conference and Workshop 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

Posters

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

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

Research Outreach

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

TEACHING & ADVISING EXPERIENCE

Teaching Assistant

Responsibilities included running sections; creating problem sets; curating course reading lists; mentoring students projects; delivering guest lectures; need finding; running user studies; building apps; running experiments.

· Research in Human-Computer Interaction Design. Graduate. 31 students
· Human-Computer Interaction Design. Undergraduate. 30 students
· Introduction to Design. Undergraduate. 42 students
· Undergraduate Machine Learning. Undergraduate. 70 students.

Professional Assistant (Undergraduate)

Assisted faculty in class hour teaching; cleared course concepts to students, conducted quizzes

· Digital Electronics and Computer Organisation course at BITS Pilani

Advisor

Thesis Advisor Committee member for Ph.D. student Center for Research and Interdisciplinarity, Université de Paris (UdP)

Auxiliary Supervisor for Undergraduate Thesis, Lodz University of Technology, Poland and Visting Student at Harvard University

Ph.D. mentor for one student, UCSD Cogntive Science

M.S.Mentor for one student, UCSD Computer Science

Mentor

9 undergraduate students

Early Research Scholars Program. UC San Diego. 2018.

Dream Fellowship Program through Undocumented Student Services at UC San Diego. 2018.

STARS (Summer Training Academy for Research Success) program. UC San Diego. 2018

Alumni Research Talks. BITS Pilani. 2014-now

AWARDS

Selected Recognition

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

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

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

PROFESSIONAL SERVICE

Committee Experience

Program Committee responsibilities include managing the peer-review process

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

Reviewer

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 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

Educational Outreach

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.