Abhraneel Sarma

asarma@tugraz.at • abhsarma.github.io

Employment

2025- **Postdoctoral Researcher**
Institute of Human-Centered Computing, Graz University of Technology
Advisor: Alexander Lex

Education

2019-2025 **Ph.D. in Computer Science**, Northwestern University
Advisors: Matthew Kay, Jessica Hullman
Thesis: Designing Interactive Systems for Reasoning With Ontological Uncertainty in Data Analysis

2019-2021 **M.S. in Computer Science**, Northwestern University

2016-2018 **M.S. Information**, University of Michigan
Advisor: Matthew Kay

2012-2016 **B.S. in Design**, Indian Institute of Technology Guwahati

Awards and Honors

Papers

2024 **Best Paper Honorable Mention** for "Odds and Insights ...", ACM CHI
2024 **Best Paper Honorable Mention** for "Opportunities, tensions ...", ACM DIS
2023 **Best Paper Honorable Mention** for "multiverse ...", ACM CHI
2022 **Best Paper Honorable Mention** for "Evaluating the use of ...", IEEE VIS
2019 **Best Paper Award** for "Increasing the Transparency of ...", ACM CHI

Other Activities

2021–2025 **Special Recognitions for Outstanding Reviews** (five), ACM CHI

Publications

Peer-reviewed Archival Conference and Journal Articles

C12 2026 **Should We Dangle a Carrot? The Effect of Performance-based Incentives in Visualization Experiments**
Abhraneel Sarma , Matthew Kay, Sheng Long, Michael Correll and Alexander Lex
IEEE Transactions on Visualization and Computer Graphics (proc. VIS 2026)

C11 2026 **Adapting CCDF Plots for Visualizing Ordinal Regression Results**
Abhraneel Sarma
IEEE Transactions on Visualization and Computer Graphics (proc. VIS 2026)

C10 2025 **More Forecasts, More (Decision) Problems: How Uncertainty Representations for Multiple Forecasts Impact Decision Making** DOI
Abhraneel Sarma , Maryam Hedayati and Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)

C9 2024 **Odds and Insights: Decision Quality in Exploratory Data Analysis Under Uncertainty** DOI
Abhraneel Sarma , Xiaoying Pu, Yuan Cui, Eli T Brown, Michael Correll and Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)
Best Paper Honorable Mention

C8 2024 **Milliways: Taming Multiverses through Principled Evaluation of Data Analysis Paths** DOI
Abhraneel Sarma , Kyle Hwang, Jessica Hullman and Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)

C7 2024 **Opportunities, tensions, and challenges in computational approaches to addressing online harassment** DOI
Evey Huang, Abhraneel Sarma , Sohyeon Hwang, Eshwar Chandrasekharan and Stevie Chancellor
Proceedings of the 2024 ACM Designing Interactive Systems Conference (DIS)
Best Paper Honorable Mention

C6 2024 **The multiverse of universes: A tutorial to plan, execute, and interpret multiverses analyses using the R package multiverse** DOI
Martin Götz, Abhraneel Sarma and Ernest O'Boyle
International Journal of Psychology

C5 2023 **multiverse: Multiplexing Alternative Data Analyses in R Notebooks** DOI
Abhraneel Sarma , Alex Kale, Michael Moon, Nathan Taback, Fanny Chevalier, Jessica Hullman and Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)
Best Paper Honorable Mention

C4 2022 **Evaluating the Use of Uncertainty Visualisations for Imputations of Data Missing At Random in Scatterplots** DOI
Abhraneel Sarma , Shunan Guo, Jane Hoffswell, Ryan Rossi, Fan Du, Eunyee Koh and Matthew Kay
IEEE Transactions on Visualization and Computer Graphics (proc. VIS 2022)
Best Paper Honorable Mention

C3 2021 **An automated approach to reasoning about task-oriented insights in responsive visualization** DOI
Hyeok Kim, Ryan Rossi, Abhraneel Sarma , Dominick Moritz and Jessica Hullman
IEEE Transactions on Visualization and Computer Graphics (proc. VIS 2021)

C2 2020 **Prior Setting in Practice: Strategies and Rationales Used in Choosing Prior Distributions for Bayesian Analysis** DOI
Abhraneel Sarma and Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)

C1 2019 **Increasing the Transparency of Research Papers with Explorable Multiverse Analyses** DOI
Pierre Dragicevic, Yvonne Jansen, Abhraneel Sarma , Matthew Kay and Fanny Chevalier
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)
Best Paper Award

Workshops and Lightly-Reviewed Articles

W2 2024 **Tasks and Telephones: Threats to Experimental Validity due to Misunderstandings of Visualisation Tasks and Strategies**
Abhraneel Sarma , Sheng Long, Michael Correll and Matthew Kay
evaluation and BEyond - methodoLogIcal approaches for Visualization (BELIV) Workshop at IEEE VIS

W1 2019 **Interactive Visualizations Tools for Prior Setting In Bayesian Analysis: Challenges For Evaluation**
Abhraneel Sarma and Matthew Kay
Workshop on Human-Centered Study of Data Science Work Practices at ACM CHI

Preprints and Working Manuscripts

P1 2019 **GAMfinder: Supporting Experts in Identifying Predictions Models which Reflect Domain Knowledge**
Abhraneel Sarma , Varun Babbar, Dawei Xie, Chudi Zhong, Cynthia Rudin and Jessica Hullman

Teaching

Instructor of Record

2025 **CS333 Interactive Information Visualization**
Northwestern University

Conference Courses

2022, 2023 **Transparent Practices for Quantitative Empirical Research**
Co-instructors: Chat Wacharamanotham, Fumeng Yang, Xiaoying Pu, Lace Padilla, Maryam Hedayati (this is a lecture series with rolling instructors).
ACM CHI 2022 (online)
ACM CHI 2023 (hybrid)
IEEE VIS 2023 (in-person)

Teaching Assistantship

2020 **JOUR377 Data Analysis and Visualization**
Northwestern University

2018 **SI330 Data Manipulation in Python**
University of Michigan

2017 **SI588 Fundamentals of Human Behavior**
University of Michigan

Mentoring

Graz University of Technology

2026- **Eden Wu**, PhD student, sub-mentored with Alexander Lex for "Understanding and Surfacing the Threat of AI Participation in Computer-Mediated Visualization Studies"

Northwestern University

2024-2026 **Yong-yu Huang**, undergraduate student for "Improving Trust by Communicating Uncertainty Due to Non-Response in Election Polls"

2024 **Sheng Long**, PhD student, co-mentored with Matthew Kay for "Tasks and Telephones..."

2024 **Mandi Cai**, PhD student, informal research mentoring

2021–2023 **Kyle Hwang**, undergraduate student for “Milliways …”
2022 **Philip Clement**, undergraduate student for “Milliways …”

Service

Program Committee

2027 **Program Committee Member**, ACM CHI
2026 **Program Committee Member**, IEEE VIS
2026 **Program Committee Member (Short Papers)**, EuroVis
2024- **Journal of Visualization and Interaction**, Open Practices Chair

Paper Reviews

2021- IEEE Visualization and Visual Analytics Conference (VIS)
2021- The ACM Conference on Human Factors in Computing Systems (CHI)
2024-2025 The ACM Symposium on User Interface Software and Technology (UIST)
2024-2026 Information Visualization
2023-2026 IEEE Transactions on Visualization and Computer Graphics (TVCG)
2022 Workshop on TRust and EXpertise in Visualization (TREX VIS)

At Northwestern University

2022 **Computer Science Incoming PhD Student Orientation**, Student Coordinator
2020-2023 **Computer Science Social Initiative**, Organising Committee

Student Volunteering

2017, 2018 IEEE Visualization and Visual Analytics Conference (VIS)

Talks & Panels

Invited Talks

2025 **Designing Interfaces to Support Reliable Data-driven Decision-making**
Department of Computer Science, Washington University in St. Louis

2021 **Using the multiverse R package for Sensitivity Analysis**
Department of Engineering Sciences and Applied Mathematics, Northwestern University

2019 **Statistics and Scientific reporting: Can we do better?**
ICOS Big Data Summer Camp, University of Michigan

Discussion Panels

2024 **“Navigating Graduate School” Panel**
with Federico Sossai, Radhika Garg, Shubham Shahi and Ayse Hunt
CS401: Introduction to Graduate Studies, Northwestern University

2024 **PhD Panel**
with Dietrich Geisler, Melissa Chen and Achala Mishra
CS298: Computer Science Research Track Program, Northwestern University

2024 **Student Research & FAQ Panel**
with Maryam Hedayati, Tommy McMichen, Donna Hooshmand, Aidan Fitzsimons, Maryam Azmandian and Nathaniel Hejduk
Computer Science Incoming PhD Student Orientation, Northwestern University

Research Assistantships & Internships

2023 **Research Intern**
Microsoft Corp.
Mentors: Jake Hofman, Dan Goldstein

2021 **Research Intern**
Adobe, Inc
Mentor: Shunan Guo

2018–2019 **Research Assistant**
MUCollective, University of Michigan

2017 **User Experience Intern**
Office of Academic Innovation, University of Michigan

2015 **Undergraduate Research Intern**
Keio-NUS CUTE Center, National University of Singapore