

Exponent®
Engineering & Scientific Consulting

Pranav Pamidighantam, Ph.D.

Scientist | Computer, Data & Security Sciences
Los Angeles
+1-310-754-2761 | ppamidighantam@exponent.com

Professional Profile

Dr. Pranav K. Pamidighantam is a data scientist with over 5 years of experience applying computational modeling, artificial intelligence, and machine learning to address challenges in a variety of science and engineering disciplines. He has worked across diverse domains including computational social systems, network science, acoustics and noise control, and behavioral sciences.

Dr. Pamidighantam combines AI/ML, graph analytics, statistical modeling, large-scale simulation, and software engineering to solve data-intensive problems in complex systems. He has extensive experience using Python, C/C++, R, and SQL to design and implement strategies for data collection, processing, modeling, and analysis. His expertise is in:

- Data Science: Utilizing classical machine learning, neural networks, and the latest AI tools along clear data visualization for predictive analytics and insight generation.
- Computational Modeling: Creating efficient and scalable computational models integrating qualitative and quantitative data sources to solve big data problems.
- Network Science: Analyzing graph and network-structured data sources (social, transportation, professional, organizational, etc.) using a range of metrics and methods from social and complex network analysis.

Dr. Pamidighantam earned his Ph.D. in Information Sciences and B.S. in Statistics & Computer Science and Psychology from the University of Illinois at Urbana-Champaign. His thesis focused on developing a computational framework for predicting and modeling how information spreads in large-scale, attributed, and dynamic networks. His work relied on a combination of techniques including graph mining, parallel and distributed computing, and community detection among other Social Network Analysis (SNA) methods. His contributions include the development and evaluation of methodologies to identify actors who spur the spread of information throughout networks.

Prior to joining Exponent, Dr. Pamidighantam's experience includes designing image recognition tools, applying machine learning methods for material science applications, designing and implementing data processing schema for blast noise data, survey design and research surrounding judgements of intentional harms, and analysis of visitor reactions to aircraft noise in National Parks.

Academic Credentials & Professional Honors

Ph.D., Information Sciences, University of Illinois at Urbana-Champaign, 2026

B.S., Statistics & Computer Science, University of Illinois at Urbana-Champaign, 2019

B.S., Psychology, University of Illinois at Urbana-Champaign, 2019

© 2026 Exponent, Inc. All Rights Reserved

Facilitating Learning Excellence Award, University of Illinois at Urbana-Champaign, 2025

Young Investigator Award, Noise session, 171st Meeting of the Acoustical Society of America, 2016

Academic Appointments

Graduate Student Researcher, School of Information Sciences, University of Illinois at Urbana-Champaign, 2020-2026

Teaching Assistant – Theory and Practice of Data Cleaning, University of Illinois at Urbana-Champaign, 2026

Teaching Assistant – Programming for Information Problems, University of Illinois at Urbana-Champaign, 2025

Prior Experience

Emerging Technology Intern, Synchrony Financial, 2019-2020

SPIN Intern, National Center for Supercomputing Applications, 2018-2019

Student Contractor, U.S. Army Corps of Engineers-ERDC-CERL, 2018-2019

Undergraduate Research Assistant, Morality and Social Cognition Lab UIUC, 2017-2019

Undergraduate Research Assistant, Schomer and Associates, Inc., 2013-2018

Publications

Pamidighantam, P., Murugappan, V., Subramanian, S., & Santos, E. E. (2025, June). "Towards community-based influence spread prediction (CIP) for edge changes in large-scale dynamic social networks," In 2025 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW) (pp. 265-274). IEEE. DOI: 10.1109/IPDPSW66978.2025.00050.

Murugappan, V., Pamidighantam, P., Subramanian, S., & Santos, E. E. (2023, May). CIP: Community-based influence spread prediction for large-scale social networks. In 2023 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW) (pp. 858-867). IEEE. DOI: 10.1109/IPDPSW59300.2023.00142.

Murugappan, V., Subramanian, S., Korah, J., Pamidighantam, P., & Santos, E. E. (2022, May). "Effect of Community-based Opinion Leaders on Guideline Dissemination in Large-Scale Physician Networks," In 2022 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW) (pp. 1170-1179). IEEE. DOI: 10.1109/IPDPSW55747.2022.00191.

Schomer, P., & Pamidighantam, P. K. (2017, June). "A possible criterion for wind farms," In Proceedings of Meetings on Acoustics (Vol. 30, No. 1, p. 040007). Acoustical Society of America.

Schomer, P. D., Erdreich, J., Pamidighantam, P. K., & Boyle, J. H. (2015). "A theory to explain some physiological effects of the infrasonic emissions at some wind farm sites," The Journal of the Acoustical Society of America, 137(3), 1356-1365. DOI: 10.1121/1.4913775.

Pamidighantam, P. K., & Schomer, P. D. (2015, May). "Preliminary results of a visitor survey of the acoustic environment at the Grand Canyon National Park," In Proceedings of Meetings on Acoustics (Vol. 23, No. 1, p. 040001). Acoustical Society of America.

Schomer, P., & Pamidighantam, P. (2014, October). On seeking methodology to "measure" a soundscape. In INTER-NOISE and NOISE-CON Congress and Conference Proceedings (Vol. 249, No. 3, pp. 4350-4357). Institute of Noise Control Engineering.

Schomer, P., & Pamidighantam, P. (2013, December). "A critical analysis of: Wind turbine health impact study: Report of independent expert panel," In Proceedings of Meetings on Acoustics (Vol. 20, No. 1, p. 040008). Acoustical Society of America.

Presentations

Pamidighantam, P., Murugappan, V., Subramanian, S., & Santos, E. E., “Towards community-based influence spread prediction (CIP) for edge changes in large-scale dynamic social networks”, June 2025, PARSOCIAL workshop, IPDPS, Milan, Italy.

Murugappan, V., Pamidighantam, P., Subramanian, S., & Santos, E. E., “CIP: Community-based influence spread prediction for large-scale social networks”, May 2023, PARSOCIAL workshop, IPDPS, St. Petersburg, Florida.

Schomer, P. D. & Pamidighantam, P. K., “On translating minimum siting distances into percentages of receiving properties meeting a stated dB(A) criterion”, May 2017, Acoustical Society of America, Boston, Massachusetts.

Pamidighantam, P. K. & Schomer, P. D., “Results of a visitor survey of the acoustic environment at the Grand Canyon National Park”, May 2016, Acoustical Society of America, Salt Lake City, Utah.

Pamidighantam, P. K. & Schomer, P. D., “Visitor assessment of anthropogenic noise at Grand Canyon National Park”, May 2015, Acoustical Society of America, Pittsburgh, Pennsylvania.