

# Rahul Parhi

*talks & presentations*

Jacobs Hall, Room 6406  
9500 Gilman Drive, MC 0407  
La Jolla, CA 92093  
☎ +1 858 822 2507  
✉ rahul@ucsd.edu  
🌐 sparsity.ucsd.edu/rahul

## Tutorials

1. “A Function-Space Tour of Data Science”. Conference on Parsimony and Learning (CPAL), Stanford, California, USA. Mar. 2025. URL: <https://function-space-tour.github.io/cpal/>.

## Invited Talks in University Seminars and Colloquia

22. “Function-Space Models for Deep Learning”. Applied Math/PDE/Data Science Seminar, Department of Mathematics, University of California, Santa Barbara. May 2025.
21. “Function-Space Models for Deep Learning”. Colloquium on Signal Processing and Machine Learning, Department of Information Technology and Electrical Engineering, ETH Zürich. Apr. 2025.
20. “Characteristic Functionals and the Innovations Approach to Stochastic Processes With Applications to Random Neural Networks”. Probability Seminar, Department of Mathematics, University of California, San Diego. Feb. 2025.
19. “Function-Space Models for Deep Learning”. Joint Seminar on Mathematical Data Science, PSU + Purdue + UMD. Feb. 2025.
18. “Function-Space Models for Deep Learning”. Frontiers in Electrical Engineering, Caltech. Feb. 2025.
17. “Function-Space Models for Deep Learning”. Mathematics of Data Science Seminar, Department of Mathematics, University of California, San Diego. Jan. 2025.
16. “Deep Learning Meets Sparse Regularization”. Seminar, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology. Mar. 2024.
15. “Deep Learning Meets Sparse Regularization”. Seminar, Department of Electrical and Computer Engineering, University of California, San Diego. Feb. 2024.
14. “Deep Learning Meets Sparse Regularization”. Seminar, Department of Applied Mathematics, University of Colorado, Boulder. Feb. 2024.
13. “Deep Learning Meets Sparse Regularization”. Seminar, Department of Computing Science, University of Alberta. Feb. 2024.
12. “Deep Learning Meets Sparse Regularization”. Seminar, Department of Mathematics, Rutgers University. Jan. 2024.
11. “Deep Learning Meets Sparse Regularization”. School of Science and Engineering Seminar, Chinese University of Hong Kong, Shenzhen. Jan. 2024.
10. “Deep Learning Meets Sparse Regularization”. Seminar, Departments of Electrical and Systems Engineering + Statistics and Data Science, Washington University in St. Louis. Dec. 2023.
9. “Deep Learning Meets Sparse Regularization”. Chair for Mathematical Information Science Seminar, ETH Zürich. Dec. 2023.

8. “*Deep Learning Meets Sparse Regularization*”. Statistics Seminar, Université Catholique de Louvain. Nov. 2023.
7. “*Deep Learning Meets Sparse Regularization*”. Math Machine Learning Seminar, Max Planck Institute for Mathematics in the Sciences + University of California, Los Angeles. Sept. 2023.
6. “*Regularizing Neural Networks via Radon-Domain Total Variation*”. Mathematical Institute for Data Science (MINDS) Seminar, Johns Hopkins University. Nov. 2022.
5. “*On BV Spaces, Splines, and Neural Networks*”. Analysis Seminar, Department of Mathematics, University of Wisconsin–Madison. Nov. 2021.
4. “*What Kinds of Functions Do Neural Networks Learn?*” Working Group on Mean Field Neural Networks, Simons Institute for the Theory of Computing. Nov. 2021.
3. “*A Representer Theorem for Single-Hidden Layer Neural Networks*”. Institute for Foundations of Data Science (IFDS) Seminar, University of Wisconsin–Madison. July 2020.
2. “*Neural Networks Learn Splines*”. Human, Animal, and Machine Learning: Experiment and Theory (HAMLET) Seminar, University of Wisconsin–Madison. Oct. 2019.
1. “*Minimum ‘Norm’ Neural Networks and Splines*”. Institute for Foundations of Data Science (IFDS) Seminar, University of Wisconsin–Madison. Sept. 2019.

## Invited Talks in Conference Sessions and Minisymposia

5. “*Deep Learning Meets Sparse Regularization*”. Mathematics of Machine Learning Session, Canadian Mathematical Society (CMS) Winter Meeting, Richmond, British Columbia, Canada. Nov. 2024.
4. “*The Role of Sparsity in Learning With Overparameterized Deep Neural Networks*”. Learning Functions with Low-Dimensional Structure Using Neural Networks Minisymposium, SIAM Conference on Mathematics of Data Science (MDS), Atlanta, Georgia, USA. Oct. 2024.
3. “*A Banach-Space View of Neural Network Training*”. Nonsmooth and Hierarchical Optimization in Machine Learning Session, International Symposium on Mathematical Programming (ISMP), Montréal, Québec, Canada. July 2024.
2. “*On the Sparsity-Promoting Effect of Weight Decay in Deep Learning*”. Rising Stars Session, Conference on Parsimony and Learning (CPAL), Pok Fu Lam, Hong Kong. Jan. 2024.
1. “*A Banach Space Representer Theorem for Single-Hidden Layer Neural Networks*”. Young Researchers Spotlight Session, SLOWDNN Workshop, Online. Oct. 2020.

## Conference Paper Oral Presentations

2. “*Modulation Spaces and the Curse of Dimensionality*”. International Conference on Sampling Theory and Applications (SampTA), New Haven, Connecticut, USA. July 2023.
1. “*On Continuous-Domain Inverse Problems with Sparse Superpositions of Decaying Sinusoids as Solutions*”. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Singapore. May 2022.

Last Updated: June 9, 2025