

Ali Siahkoohi

Simons Postdoctoral Fellow
Dept. of Comp. Applied Math. & Operations Research
Rice University

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<https://alishahkoohi.github.io>
Last updated: February 24, 2025

Research Interests and Highlights

My research, under the mentorship of Maarten V. de Hoop and Richard G. Baraniuk, focuses on understanding and addressing AI reliability concerns, particularly by designing scalable methods for **quantifying uncertainty in AI** models through the use of generative models, variational inference, and hypernetworks.

I have published 39 peer-reviewed articles (citations: 962, h-index: 18, i10-index: 27), including 17 first-author papers in high-impact journals and conference proceedings, such as NeurIPS, ICML, and ICLR. My work has also been covered in major media outlets, including The New York Times, The Telegraph, and Futurism.

Education

Georgia Institute of Technology

Ph.D. in Computational Science and Engineering (minor in Applied Math.)
Advised by Felix J. Herrmann

August 2022
Atlanta, GA, USA

University of Tehran

M.Sc. in Geophysics

March 2016
Tehran, Iran

Sharif University of Technology

B.Sc. in Electrical Engineering

August 2013
Tehran, Iran

Academic Appointments

Rice University

Simons Postdoctoral Fellow
Department of Computational Applied Mathematics & Operations Research
Jointly hosted by Maarten V. de Hoop and Richard G. Baraniuk

August 2022 – Present
Houston, TX, USA

Publications

Google Scholar profile: <https://scholar.google.com/citations?user=sxRMqYIAAAAJ&h>

In Preparation & Under Review

P2. A. Siahkoohi, R. Morel, R. Balestrieri, E. Allys, G. Sainton, T. Kawamura, and M. V. de Hoop. Martian time-series unraveled: A multi-scale nested approach with factorial variational autoencoders. Preprint arXiv:2305.16189, 2024
[pdf] [code] [slides] [bib]

P1. P. M. Mayer, L. Luzi, A. Siahkoohi, D. H. Johnson, and R. G. Baraniuk. Improving fairness and mitigating MADness in generative models. Preprint arXiv:2405.13977, 2024
[pdf] [code] [slides] [bib]

Journal Publications

J8. R. Orozco, A. Siahkoohi, M. Louboutin, and F. J. Herrmann. ASPIRE: Iterative amortized posterior inference for Bayesian inverse problems. *Inverse Problems*, In print, 2025
[pdf] [code] [bib]

J7. R. Orozco, P. Witte, M. Louboutin, A. Siahkoohi, G. Rizzuti, B. Peters, and F. J. Herrmann. InvertibleNetworks.jl: A Julia package for scalable normalizing flows. *Journal of Open Source Software*, 9(99):6554,

2024

[pdf] [code] [link] [bib]

- J6. L. Luzi, P. M. Mayer, J. Casco-Rodriguez, [A. Siahkoohi](#), and R. G. Baraniuk. Boomerang: Local sampling on image manifolds using diffusion models. *Transactions on Machine Learning Research*, 2024a
[pdf] [code] [link] [bib]
- J5. M. Louboutin, Z. Yin, R. Orozco, T. J. Grady II, [A. Siahkoohi](#), G. Rizzuti, P. A. Witte, O. Møyner, G. J. Gorman, and F. J. Herrmann. Learned multiphysics inversion with differentiable programming and machine learning. *The Leading Edge*, 42(7):474–486, 2023
[pdf] [link] [bib] [featured in Seismic Soundoff] [journal's most downloaded paper in '23]
- J4. Y. Zhang, Z. Yin, O. López, [A. Siahkoohi](#), M. Louboutin, R. Kumar, and F. J. Herrmann. Optimized time-lapse acquisition design via spectral gap ratio minimization. *Geophysics*, 88(4):A19–A23, 2023a
[pdf] [link] [bib]
- J3. [A. Siahkoohi](#), G. Rizzuti, R. Orozco, and F. J. Herrmann. Reliable amortized variational inference with physics-based latent distribution correction. *Geophysics*, 88(3):R297–R322, 2023a
[pdf] [slides] [code] [link] [bib] [featured in Geophysics Bright Spots]
- J2. [A. Siahkoohi](#), G. Rizzuti, and F. J. Herrmann. Deep Bayesian inference for seismic imaging with tasks. *Geophysics*, 87(5):S281–S302, 2022a
[pdf] [code] [link] [bib]
- J1. [A. Siahkoohi](#), M. Louboutin, and F. J. Herrmann. The importance of transfer learning in seismic modeling and imaging. *Geophysics*, 84(6):A47–A52, 2019a
[pdf] [code] [link] [bib]

Peer-Reviewed Conference Proceedings

- C32. S. Alemohammad, J. Casco-Rodriguez, L. Luzi, A. I. Humayun, H. Babaei, D. LeJeune, [A. Siahkoohi](#), and R. G. Baraniuk. Self-consuming generative models go MAD. In *The Twelfth International Conference on Learning Representations*, 2024
[pdf] [extended pdf] [poster] [link] [bib] [featured in the news 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]
- C31. L. Luzi, D. LeJeune, [A. Siahkoohi](#), S. Alemohammad, V. Saragadam, H. Babaei, N. Liu, Z. Wang, and R. G. Baraniuk. Titan: Bringing the deep image prior to implicit representations. In *IEEE International Conference on Acoustics, Speech and Signal Processing*, pages 6165–6169, 2024b
[pdf] [code] [link] [bib]
- C30. L. Baldassari, [A. Siahkoohi](#), J. Garnier, K. Sølna, and M. V. de Hoop. Conditional score-based diffusion models for Bayesian inference in infinite dimensions. In *Advances in Neural Information Processing Systems*, volume 36, pages 24262–24290, 2023
[pdf] [slides] [poster] [code] [link] [bib] [featured as a Spotlight presentation]
- C29. [A. Siahkoohi](#), R. Morel, M. V. de Hoop, E. Allys, G. Sainton, and T. Kawamura. Unearthing InSights into Mars: Unsupervised source separation with limited data. In *Proceedings of the 40th International Conference on Machine Learning*, volume 202, pages 31754–31772, 2023b
[pdf] [slides] [poster] [code] [link] [bib]
- C28. R. Orozco, M. Louboutin, [A. Siahkoohi](#), G. Rizzuti, T. van Leeuwen, and F. J. Herrmann. Amortized normalizing flows for transcranial ultrasound with uncertainty quantification. In *Medical Imaging with Deep Learning*, volume 227, pages 332–349, 2023a
[pdf] [link] [bib]
- C27. R. Orozco, [A. Siahkoohi](#), M. Louboutin, and F. J. Herrmann. Refining amortized posterior approximations using gradient-based summary statistics. In *5th Symposium on Advances in Approximate Bayesian Inference*, 2023b
[pdf] [link] [bib]
- C26. R. Orozco, [A. Siahkoohi](#), G. Rizzuti, T. van Leeuwen, and F. J. Herrmann. Adjoint operators enable fast

- and amortized machine learning based Bayesian uncertainty quantification. In *Medical Imaging 2023: Image Processing*, volume 12464, page 124641L, 2023c
[pdf] [link] [bib]
- C25. Y. Zhang, Z. Yin, O. Lopez, A. Siahkoohi, M. Louboutin, and F. J. Herrmann. 3D seismic survey design by maximizing the spectral gap. In *Third International Meeting for Applied Geoscience & Energy*, 2023b
[pdf] [poster] [bib]
- C24. A. Siahkoohi, M. Chinen, T. Denton, W. B. Kleijn, and J. Skoglund. Ultra-low-bitrate speech coding with pretrained Transformers. In *Proceedings of Interspeech*, pages 4421–4425, 2022b
[pdf] [link] [bib]
- C23. A. Siahkoohi, M. Louboutin, and F. J. Herrmann. Velocity continuation with Fourier neural operators for accelerated uncertainty quantification. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1765–1769, 2022c
[pdf] [slides] [code] [link] [bib]
- C22. M. Louboutin, P. Witte, A. Siahkoohi, G. Rizzuti, Z. Yin, R. Orozco, and F. J. Herrmann. Accelerating innovation with software abstractions for scalable computational geophysics. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1482–1486, 2022
[pdf] [slides] [link] [bib]
- C21. Z. Yin, A. Siahkoohi, M. Louboutin, and F. J. Herrmann. Learned coupled inversion for carbon sequestration monitoring and forecasting with Fourier neural operators. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 467–472, 2022
[pdf] [slides] [code] [link] [bib] [student oral paper honorable mention]
- C20. Y. Zhang, M. Louboutin, A. Siahkoohi, Z. Yin, R. Kumar, and F. J. Herrmann. A simulation-free seismic survey design by maximizing the spectral gap. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 15–20, 2022
[pdf] [slides] [code] [link] [bib]
- C19. A. Siahkoohi, R. Orozco, G. Rizzuti, and F. J. Herrmann. Wave-equation based inversion with amortized variational Bayesian inference. In *EAGE Deep learning for seismic processing: Investigating the foundations workshop*, 2022d
[pdf] [slides] [code] [link] [bib]
- C18. R. Orozco, A. Siahkoohi, G. Rizzuti, T. van Leeuwen, and F. J. Herrmann. Photoacoustic imaging with conditional priors from normalizing flows. In *NeurIPS Workshop on Deep Learning and Inverse Problems*, 2021
[pdf] [poster] [link] [bib]
- C17. A. Siahkoohi, G. Rizzuti, M. Louboutin, P. Witte, and F. J. Herrmann. Preconditioned training of normalizing flows for variational inference in inverse problems. In *3rd Symposium on Advances in Approximate Bayesian Inference*, 2021
[pdf] [slides] [code] [link] [bib]
- C16. A. Siahkoohi and F. J. Herrmann. Learning by example: Fast reliability-aware seismic imaging with normalizing flows. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1580–1585, 2021
[pdf] [slides] [code] [link] [bib]
- C15. R. Kumar, M. Kotsi, A. Siahkoohi, and A. Malcolm. Enabling uncertainty quantification for seismic data preprocessing using normalizing flows (NF)—An interpolation example. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1515–1519, 2021
[pdf] [code] [link] [bib]
- C14. G. Rizzuti, A. Siahkoohi, P. A. Witte, and F. J. Herrmann. Parameterizing uncertainty by deep invertible networks, an application to reservoir characterization. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1541–1545, 2020

- [pdf] [slides] [code] [link] [bib]
- C13. M. Zhang, A. Siahkoohi, and F. J. Herrmann. Transfer learning in large-scale ocean bottom seismic wavefield reconstruction. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1666–1670, 2020
[pdf] [slides] [code] [link] [bib]
 - C12. A. Siahkoohi, G. Rizzuti, and F. J. Herrmann. Weak deep priors for seismic imaging. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 2998–3002, 2020a
[pdf] [slides] [code] [link] [bib]
 - C11. A. Siahkoohi, G. Rizzuti, and F. J. Herrmann. Uncertainty quantification in imaging and automatic horizon tracking—A Bayesian deep-prior based approach. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 1636–1640, 2020b
[pdf] [slides] [code] [link] [bib]
 - C10. A. Siahkoohi, G. Rizzuti, and F. J. Herrmann. A deep-learning based Bayesian approach to seismic imaging and uncertainty quantification. In *European Association of Geoscientists & Engineers Conference and Exhibition Extended Abstracts*, 2020c
[pdf] [slides] [code] [link] [bib]
 - C9. F. J. Herrmann, A. Siahkoohi, and G. Rizzuti. Learned imaging with constraints and uncertainty quantification. In *NeurIPS Deep Inverse Workshop*, 2019
[pdf] [slides] [poster] [link] [bib]
 - C8. A. Siahkoohi, R. Kumar, and F. J. Herrmann. Deep-learning based ocean bottom seismic wavefield recovery. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 2232–2237, 2019b
[pdf] [code] [slides] [link] [bib]
 - C7. A. Siahkoohi, D. J. Verschuur, and F. J. Herrmann. Surface-related multiple elimination with deep learning. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 4629–4634, 2019c
[pdf] [slides] [link] [bib]
 - C6. G. Rizzuti, A. Siahkoohi, and F. J. Herrmann. Learned iterative solvers for the Helmholtz equation. In *European Association of Geoscientists & Engineers Conference and Exhibition Extended Abstracts*, 2019
[pdf] [slides] [link] [bib]
 - C5. A. Siahkoohi, M. Louboutin, R. Kumar, and F. J. Herrmann. Deep convolutional neural networks in prestack seismic—two exploratory examples. In *Society of Exploration Geophysicists Technical Program Expanded Abstracts*, pages 2196–2200, 2018a
[pdf] [poster] [link] [bib]
 - C4. A. Siahkoohi, R. Kumar, and F. J. Herrmann. Seismic data reconstruction with generative adversarial networks. In *European Association of Geoscientists & Engineers Conference and Exhibition Extended Abstracts*, 2018b
[pdf] [slides] [link] [bib]
 - C3. A. Siahkoohi and A. Gholami. Sparsity promoting least squares migration for laterally inhomogeneous media. In *7th EAGE Saint Petersburg International Conference and Exhibition*, 2016
[pdf] [link] [bib]
 - C2. M. S. Ebrahimi, M. H. Daraei, J. Rezaei, and A. Siahkoohi. A novel utilization of wireless sensor networks as data acquisition system in smart grids. In *Materials Science and Information Technology*, volume 433-440, pages 6725–6730, 2012
[pdf] [link] [bib]
 - C1. A. Najafi, A. Siahkoohi, and M. B. Shamsollahi. A content-based digital image watermarking algorithm robust against JPEG compression. In *IEEE International Symposium on Signal Processing and*

Information Technology, pages 432–437, 2011
[pdf] [link] [bib]

Theses

- T1. [A. Siahkoohi](#). *Deep generative models for solving geophysical inverse problems*. PhD thesis, **Georgia Institute of Technology**, 2022
[pdf] [slides] [link] [bib]

Technical Reports

- R4. L. Baldassari, [A. Siahkoohi](#), J. Garnier, K. Sølna, and M. V. de Hoop. Taming score-based diffusion priors for infinite-dimensional nonlinear inverse problems. Technical Report arXiv:2405.15676, Rice University, 2024
[pdf] [bib]
- R3. M. Louboutin, [A. Siahkoohi](#), R. Wang, and F. J. Herrmann. Low-memory stochastic backpropagation with multi-channel randomized trace estimation. Technical Report arXiv:2106.06998, Georgia Institute of Technology, 2021
[pdf] [code] [link] [bib]
- R2. [A. Siahkoohi](#), G. Rizzuti, P. A. Witte, and F. J. Herrmann. Faster uncertainty quantification for inverse problems with conditional normalizing flows. Technical Report arXiv:2007.07985, Georgia Institute of Technology, 2020d [pdf] [link] [bib]
- R1. [A. Siahkoohi](#), M. Louboutin, and F. J. Herrmann. Neural network augmented wave-equation simulation. Technical Report arXiv:1910.00925, Georgia Institute of Technology, 2019d
[pdf] [code] [link] [bib]

Awards

Future Faculty Fellows Award

Rice University, George R. Brown School of Engineering and Computing
[link]

June 2024
Houston, TX, USA

Selected Research Proposal Experience

Scientific ML-supported subsurface characterization in physical function spaces

Awarded, 2024

- Funding Source: Occidental Petroleum Corporation, PI: Maarten V. de Hoop
- **Contributions:** Developed ideas and contributed to writing for two of the four research thrusts entitled “Score diffusion, nonlinear operators, and uncertainty quantification in function spaces” and “Unsupervised, factorial data decomposition and hidden signals: Reservoir characterization below salt, denoising, and monitoring”

Learning and forecasting complex fault dynamics – Predictability of earthquakes

Not funded, 2024

- Funding Source: National Science Foundation, PI: Maarten V. de Hoop
- **Contributions:** Developed ideas and contributed to writing for one of the four research thrusts entitled “Structure in data, clustering, lattice theory, and diffusion models”

Exploring the local geometry of deep networks

Awarded, 2023

- Funding Source: Office of Naval Research (DURIP), PI: Richard G. Baraniuk
- **Contributions:** Developed ideas and wrote research objectives for one of the three research thrusts entitled “The geometry of deep probabilistic models”

A deep-learning framework for stable, interpretable, and uncertainty-quantified hybrid modeling of multi-scale complex systems Not funded, 2023

- ▶ Funding Source: Department of Energy, PI: Pedram Hassanzadeh
- ▶ **Contributions:** Coordinated efforts within Richard G. Baraniuk's group (a co-PI) to develop and write research objectives for one of the four research thrusts entitled "Spline operator-based analysis of Deep neural networks"

Topological deep learning, causal inference, and data-driven forecasting for subsurface multiscale multiphysics systems Awarded, 2022

- ▶ Funding Source: Department of Energy, PI: Maarten V. de Hoop
- ▶ **Contributions:** Led the effort to write the annual progress report

Mentoring Experience

Paul M. Mayer [\[link\]](#) 2022 – Present
PhD Student, Rice University Houston, TX, USA
Contributions: Advised on the development of methods and software for two projects and co-authored two papers (Luzi et al., 2024a; Mayer et al., 2024)

Rafael Orozco [\[link\]](#) 2020 – 2022
PhD Student, Georgia Institute of Technology Atlanta, GA, USA
Contributions: Advised on the development of methods and software for main PhD thesis and co-authored four papers (Orozco et al., 2021, 2023b,c; ?)

Mi Zhang [\[link\]](#) 2019 – 2020
Visiting PhD Student, China University of Petroleum-Beijing Atlanta, GA, USA
Contributions: Advised on the development of methods and software for a project and co-authored a paper (Zhang et al., 2020)

Teaching Experience

Rice University Houston, TX, USA
Department of Computational Applied Mathematics & Operations Research

- ▶ Numerical Analysis Fall 2024
Substitute Instructor (12 lectures)
- ▶ Numerical Analysis I Fall 2022
Substitute Instructor (18 lectures)

Georgia Institute of Technology Atlanta, GA, USA
School of Computational Science and Engineering

- ▶ Computational Foundations of Machine Learning Spring 2022
Teaching Assistant
- ▶ Imaging with Data-Driven Models Fall 2019
Teaching Assistant
- ▶ Numerical Analysis I Fall 2018
Teaching Assistant

Sharif University of Technology Tehran, Iran
Department of Electrical Engineering

- ▶ Digital Signal Processing Spring 2011
Teaching Assistant
- ▶ Signals and Systems Spring 2011
Teaching Assistant
- ▶ Linear Algebra Spring 2010
Teaching Assistant
- ▶ Electrical Engineering: Principles and Laboratory Fall 2009

Talks

Invited Talks

- | | |
|---|--|
| T22. ISCL Seminar Series, Pennsylvania State University
Mitigating biases in self-consuming generative models
Interdisciplinary Scientific Computing Laboratory (Dr. Romit Maulik)
[video] | November 2024
Virtual oral presentation |
| T21. CNRS, Université Montpellier
Low-cost uncertainty quantification for large-scale inverse problems
RhEoVOLUTION Group (Dr. Andréa Tommasi) | January 2023
Virtual oral presentation |
| T20. Workshop on Subsurface Uncertainty Description and Estimation
Reliable amortized variational inference with conditional normalizing flows via
physics-based latent distribution correction
International Meeting for Applied Geoscience & Energy | August 2022
Oral presentation |
| T19. Intelligent illumination of the Earth Workshop
Fast and reliability-aware seismic imaging with conditional normalizing flows
King Abdullah University of Science and Technology | June 2021
Virtual oral presentation |
| T18. Advances in Seismic Imaging and Inversion Mini-symposium
Unsupervised data-guided uncertainty analysis in imaging and horizon
tracking
The 3rd Annual Meeting of the SIAM Texas–Louisiana Section | October 2020
Virtual oral presentation |

Contributed Talks

- | | |
|--|--|
| T19. Geo-Mathematical Imaging Group Partners Meeting, Rice University
Improving fairness and mitigating MADness in generative models | November 2024
Oral presentation |
| T18. International Conference on Machine Learning
Unearthing InSights into Mars: Unsupervised source separation with limited data | July 2023
Poster presentation |
| T17. Symposium on Advances in Approximate Bayesian Inference
Refining amortized posterior approximations using gradient-based summary
statistics | July 2023
Poster presentation |
| T16. Geo-Mathematical Imaging Group Partners Meeting, Rice University
Martian time-series unraveled: A multi-scale nested approach with factorial
variational autoencoders | May 2023
Oral presentation |
| T15. Geo-Mathematical Imaging Group Partners Meeting, Rice University
Unearthing InSights into Mars: Unsupervised source separation with limited data | May 2023
Oral presentation |
| T14. International Meeting for Applied Geoscience & Energy
Velocity continuation with Fourier neural operators for accelerated uncertainty
quantification | August 2022
Oral presentation |
| T13. Chrome Media Team, Google
Low-bitrate speech coding with Transformers | December 2021
Virtual oral presentation |
| T12. ML4SEISMIC Partners Meeting, Georgia Institute of Technology
Multifidelity conditional normalizing flows for physics-guided Bayesian
inference | November 2021
Virtual oral presentation |
| T11. ML4SEISMIC Partners Meeting, Georgia Institute of Technology
Uncertainty quantification in imaging and automatic horizon tracking—A
Bayesian deep-prior based approach | November 2021
Virtual oral presentation |

- T10. **Society of Exploration Geophysicists International Exposition and Annual Meeting** September 2021
Learning by example: Fast reliability-aware seismic imaging with normalizing flows [video] Virtual oral presentation
- T9. **Symposium on Advances in Approximate Bayesian Inference** January 2021
Preconditioned training of normalizing flows for variational inference in inverse problems [video] Prerecorded short oral presentation
- T8. **European Association of Geoscientists & Engineers Annual Conference & Exhibition** December 2020
A deep-learning based Bayesian approach to seismic imaging and uncertainty quantification Virtual oral presentation
- T7. **Society of Exploration Geophysicists International Exposition and Annual Meeting** October 2020
Uncertainty quantification in imaging and automatic horizon tracking—A Bayesian deep-prior based approach [video] Virtual oral presentation
- T6. **Society of Exploration Geophysicists International Exposition and Annual Meeting** October 2020
Weak deep priors for seismic imaging [video] Virtual oral presentation
- T5. **Society of Exploration Geophysicists Student Chapter, Georgia Tech** February 2020
A deep-learning based Bayesian approach to seismic imaging and uncertainty quantification Oral presentation
- T4. **HotCSE Seminar, CSE Department, Georgia Institute of Technology** November 2019
Learned imaging with constraints and uncertainty quantification Oral presentation
- T3. **Society of Exploration Geophysicists International Exposition & Annual Meeting** September 2019
Deep-learning based ocean bottom seismic wavefield recovery Oral presentation
- T2. **Society of Exploration Geophysicists International Exposition & Annual Meeting** September 2019
Surface-related multiple elimination with deep learning Oral presentation
- T1. **Society of Exploration Geophysicists International Exposition & Annual Meeting** October 2018
Deep convolutional neural networks in prestack seismic—two exploratory examples Poster presentation

Professional Service

Editorial Service

- **Acta Geophysica**, Associate Editor 2024 – Present
Applied Geophysics section
- **Journal of Mathematics**, Guest Editor 2023 – 2024
Special issue on Applied Mathematics in Inverse Problems and Uncertainty Quantification

Conference Organization

- **International Meeting for Applied Geoscience & Energy**, Session Chair 2022

Technical Program Committee Member and Reviewer

- Neural Information Processing Systems (NeurIPS) 2023 – 2025
- Frontiers in Probabilistic Inference: Sampling Meets Learning (ICLR workshop) 2025
- International Conference on Machine Learning (ICML) 2024 – 2025
- Annual AAAI Conference on Artificial Intelligence 2025

- ▶ Artificial Intelligence and Statistics Conference (AISTATS) 2024 – 2025
- ▶ International Conference on Learning Representations (ICLR) 2024 – 2025
- ▶ Advances in Approximate Bayesian Inference (AABI) 2023 – 2024
- ▶ Structured Probabilistic Inference & Generative Modeling (ICML workshop) 2023 – 2024
- ▶ International Speech Communication Association (Interspeech) 2023
- ▶ Deep Generative Models for Health (NeurIPS workshop) 2023
- ▶ International Meeting for Applied Geoscience & Energy 2023

Journal Reviewer

- ▶ IEEE Transactions on Neural Networks and Learning Systems
- ▶ IEEE Geoscience and Remote Sensing Letters
- ▶ IEEE Transactions on Geoscience and Remote Sensing
- ▶ Notices of the American Mathematical Society (AMS)
- ▶ Remote Sensing
- ▶ Journal of Geophysical Research – Solid Earth
- ▶ Geophysical Prospecting
- ▶ Geophysics
- ▶ Geosciences
- ▶ Entropy

Industry Research Experience

Google

Research Intern (cf. [A. Siahkoohi et al. \(2022b\)](#))
 Chrome Media Team

August 2021 – December 2021
 San Francisco, CA, USA

Selected Media Coverage

AI's Mad Loops

Rice Magazine
[\[link\]](#)

February 2025

AI Appears to Be Slowly Killing Itself

Futurism
[\[link\]](#)

August 2024

When A.I.'s Output Is a Threat to A.I. Itself

The New York Times
[\[link\]](#)

August 2024

Breaking MAD: Generative AI could break the internet

Rice News, Rice University
[\[link\]](#)

July 2024

'Cesspool of AI crap' or smash hit? LinkedIn's AI-powered collaborative articles offer a sobering peek at the future of content

Fortune
[\[link\]](#)

April 2024

AI's 'mad cow disease' problem tramples into earnings season

Yahoo!finance
[\[link\]](#)

April 2024

'Mad' AI risks destroying the Information Age The Telegraph [link]	February 2024
When AI Is Trained on AI-Generated Data, Strange Things Start to Happen Futurism [link]	August 2023
Episode 194: Improving integration in machine learning workflows Seismic Soundoff Podcast, Society of Exploration Geophysicists [link]	July 2023
Training AI With Outputs of Generative AI Is Mad CDOtrends [link]	July 2023
AI's trained on AI-generated images produce glitches and blurs NewScientist [link]	July 2023
Scientists make AI go crazy by feeding it AI-generated content TweakTown [link]	July 2023
AI Loses Its Mind After Being Trained on AI-Generated Data Futurism [link]	July 2023
Generative AI Goes 'MAD' When Trained on AI-Created Data Over Five Times Tom's Hardware [link]	July 2023
Group Brings Seismic Imaging to Climate-Change Conversations and Beyond College of Computing News, Georgia Institute of Technology [link]	August 2022