

Asad Aali

I am a research scientist at Stanford University, and my work focuses on developing machine learning (ML) algorithms for healthcare applications.

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Education

- 2022 – 2024 **MS, Electrical & Computer Engineering**, The University of Texas at Austin.
Thesis: *Solving Inverse Problems with Generative Priors Trained on Corrupted Data.*
- 2021 – 2022 **MS, Information Technology**, The University of Texas at Austin.
Thesis: *Optimizing cloud usage costs using Deep Learning-driven Transformer models.*
- 2015 – 2019 **BS (Honors), Accounting & Finance**, Lahore University of Management Sciences.
Minor: *Computer Science.*

Employment

- 2024 – **Research Scientist**, Stanford University.
Research focus: Machine learning, foundation models, healthcare
- 2022 – 2024 **Research Assistant**, The University of Texas at Austin.
Research focus: Biomedical imaging, inverse problems, deep learning
- 2023 – 2023 **Research Intern**, Amazon.
Fine-tuned LLMs to improve synthesis of brief hospital courses from clinical notes
- 2022 – 2022 **Machine Learning Intern**, Dell Technologies.
Built a pipeline using temporal fusion transformers to optimize cloud usage

Research

Journal Articles

- 1 **A. Aali**, M. Arvinte, S. Kumar, Y. I. Arefeen, and J. I. Tamir, Enhancing deep learning-driven multi-coil mri reconstruction via self-supervised denoising, *arXiv:2411.12919*, 2024.
- 2 **A. Aali**, D. Van Veen, Y. I. Arefeen, J. Hom, C. Bluethgen, E. P. Reis, *et al.*, A dataset and benchmark for hospital course summarization with adapted large language models, *Journal of the American Medical Informatics Association*, 2024.
- 3 D. Van Veen, C. Van Uden, L. Blankemeier, J.-B. Delbrouck, **A. Aali**, C. Bluethgen, *et al.*, Adapted large language models can outperform medical experts in clinical text summarization, *Nature medicine*, 2024.

Conference Proceedings

- 1 **A. Aali**, G. Daras, B. Levac, S. Kumar, A. G. Dimakis, and J. I. Tamir, Ambient diffusion posterior sampling: Solving inverse problems with diffusion models trained on corrupted data, in *International Conference on Learning Representations (ICLR)*, 2025.
- 2 **A. Aali**, M. Arvinte, S. Kumar, Y. I. Arefeen, and J. I. Tamir, Gsure denoising enables training of higher quality generative priors for accelerated multi-coil mri reconstruction, in *International Society for Magnetic Resonance in Medicine*, 2024.

- 3 **A. Aali**, A. Johnston, L. Blankemeier, D. Van Veen, L. T. Derry, D. Svec, *et al.*, Detecting underdiagnosed medical conditions with deep learning-based opportunistic ct imaging, in *arXiv:2409.11686*, 2024.
- 4 **A. Aali**, M. Arvinte, S. Kumar, and J. I. Tamir, Solving inverse problems with score-based generative priors learned from noisy data, in *57th Asilomar Conference on Signals, Systems, and Computers*, IEEE, 2023.
- 5 S. Kumar, **A. Aali**, and J. I. Tamir, Multi-contrast 3d fast spin-echo t2 shuffling reconstruction with score-based deep generative priors, in *International Society for Magnetic Resonance in Medicine*, 2023.

Datasets

- 1 **A. Aali**, D. Van Veen, Y. I. Arefeen, J. Hom, C. Bluethgen, E. P. Reis, *et al.*, Mimic-iv-ext-bhc: Labeled clinical notes dataset for hospital course summarization, *PhysioNet*, 2024.

Talks

- 2024
 - 📖 **Detecting Underdiagnosed Medical Conditions with Opportunistic CT.**
Radiology Retreat, Stanford University.
 - 📖 **Splitwiser: Efficient LLM Inference with Constrained Resources.**
Lecture (ECE 382V), The University of Texas at Austin.
 - 📖 **Generative Priors for Accelerated MRI Reconstruction.**
Guest Lecture (COSC 4380), Austin Community College (ACC).
 - 📖 **Accelerated Multi-Coil MRI Reconstruction.**
ECE Outstanding Student Series, The University of Texas at Austin.
 - 📖 **GSURE Denoising for Accelerated Multi-Coil MRI Reconstruction.**
International Society for Magnetic Resonance in Medicine, Singapore.
- 2023
 - 📖 **Hospital Course Summarization with Adapted Large Language Models.**
Intern Research Showcase, Amazon.
 - 📖 **MIMO Channel Estimation with Priors learned from Noisy Data.**
6G@UT Conference, The University of Texas at Austin.
 - 📖 **Solving Inverse Problems with Priors learned from Noisy Data.**
IEEE Asilomar Conference, Pacific Grove.
 - 📖 **Generative Priors for Solving Inverse Problems from Noisy Data.**
IFML Workshop, University of Washington, Seattle.
- 2022
 - 📖 **MIMO Channel Estimation using Score-Based Generative Models.**
6G@UT Conference, The University of Texas at Austin.

Awards and Achievements

- 2024
 - 📖 **ECE Outstanding Student Award**, The University of Texas at Austin.