

# Asad Aali

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## Education

- 2022 – 2024  **University of Texas at Austin**  
*MS, Electrical & Computer Engineering*
- 2021 – 2022  **University of Texas at Austin**  
*MS, Information Technology*
- 2015 – 2019  **Lahore University of Management Sciences**  
*BS, Accounting & Finance*

## Experience

- 2024 – 2026  **Stanford University**  
*Research Scientist*
- 2026 – 2026  **Apple**  
*Machine Learning Intern*
- 2026 –  **Nexej**  
*Founder*

## Honors and Awards

- 2025  **Best Paper Award Candidate**, NeurIPS GenAI4Health
- 2024  **ECE Outstanding Student Fellowship**, UT Austin

## Journal Articles

- 2026  **Holistic evaluation of large language models for medical tasks with MedHELM**  
Suhana Bedi, Hejie Cui, Miguel Fuentes, Alyssa Unell, Michael Wornow, et al  
*Nature Medicine*
- 2025  **Robust multi-coil MRI reconstruction via self-supervised denoising**  
Asad Aali, Marius Arvinte, Sidharth Kumar, Yamin I Arefeen, Jonathan I Tamir  
*Magnetic Resonance in Medicine (MRM)*
-  **A dataset and benchmark for hospital course summarization with adapted large language models**  
Asad Aali, Dave Van Veen, Yamin I Arefeen, Jason Hom, Christian Bluethgen, et al  
*Journal of the American Medical Informatics Association (JAMIA)*
-  **Performance of large language model-generated spanish discharge material**  
Eduardo Guerrero, Asad Aali, Emanuel Irizarry, Nicole Corso, Jason Hom, et al  
*Journal of General Internal Medicine*
- 2024  **Adapted large language models can outperform medical experts in clinical text summarization**  
Dave Van Veen, Cara Uden, Louis Blankemeier, Jean Delbrouck, Asad Aali, et al  
*Nature Medicine*

## Conferences

- 2025
- **MedVAL: Toward expert-level medical text validation with language models**  
Asad Aali, Vasiliki Bikia, Maya Varma, Nicole Chiou, Sophie Ostmeier, et al  
*Neural Information Processing Systems (GenAI4Health) - ORAL (TOP 5%)*
  - **Prompt optimization improves robustness of language model benchmarks for medical tasks**  
Asad Aali, Muhammad Ahmed Mohsin, Vasiliki Bikia, Arnav Singhvi, Suhana Bedi, et al  
*Machine Learning for Health (ML4H)*
  - **PaDIS-MRI: Patch-based diffusion for data-efficient, radiologist-preferred MRI reconstruction**  
Rohan Sanda, Asad Aali, Andrew Johnston, Eduardo Reis, Jonathan Singh, et al  
*Machine Learning for Health (ML4H) - SPOTLIGHT*
  - **Best of both worlds: Combining general and clinical language models for classification and text generation**  
Sasha Ronaghi, Asad Aali, Chloe Stanwyck, Miguel Fuentes, Tina Hernandez-Boussard, et al  
*Machine Learning for Health (ML4H)*
  - **MedFactEval and MedAgentBrief: A framework and workflow for generating and evaluating factual clinical summaries**  
François Grolleau, Emily Alsentzer, Timothy Keyes, Philip Chung, Akshay Swaminathan, et al  
*Pacific Symposium on Biocomputing (PSB)*
- 2024
- **Ambient diffusion posterior sampling: Solving inverse problems with diffusion models trained on corrupted data**  
Asad Aali, Giannis Daras, Brett Levac, Sidharth Kumar, Alexandros G Dimakis, et al  
*International Conference on Learning Representations (ICLR)*
  - **GSURE denoising enables training of higher quality generative priors for accelerated multi-coil MRI reconstruction**  
Asad Aali, Marius Arvinte, Sidharth Kumar, Yamin I Arefeen, Jonathan I Tamir  
*International Society for Magnetic Resonance in Medicine (ISMRM) - ORAL*
  - **MIMIC-IV-BHC: Labeled clinical notes dataset for hospital course summarization**  
Asad Aali, Dave Van Veen, Yamin I Arefeen, Jason Hom, Christian Bluethgen, et al  
*PhysioNet*
- 2023
- **Solving inverse problems with score-based generative priors learned from noisy data**  
Asad Aali, Marius Arvinte, Sidharth Kumar, Jonathan I Tamir  
*IEEE Asilomar Conference on Signals, Systems, and Computers*
  - **Multi-contrast 3D fast spin-echo T2 shuffling reconstruction with score-based deep generative priors**  
Sidharth Kumar, Asad Aali, Jonathan I Tamir  
*International Society for Magnetic Resonance in Medicine (ISMRM) - ORAL*

## Preprints

- 2026
- **Continuous-utility direct preference optimization**  
Muhammad Ahmed Mohsin, Muhammad Umer, Ahsan Bilal, Zihao He, Usman Rafique, et al  
*arXiv:2602.00931*
  - **Training-free adaptation of new-generation LLMs using legacy clinical models**  
Sasha Ronaghi, Chloe Stanwyck, Asad Aali, Amir Ronaghi, Miguel Fuentes, et al  
*arXiv:2601.03423*
- 2025
- **Structured prompting enables more robust evaluation of language models**  
Asad Aali, Muhammad Ahmed Mohsin, Vasiliki Bikia, Arnav Singhvi, Richard Gaus, et al  
*arXiv:2511.20836*

## Preprints (continued)

- **Resolution-independent neural operators for multi-rate sparse-view CT**  
Aujasvit Datta, Jiayun Wang, **Asad Aali**, Armeet Singh Jatyani, Anima Anandkumar  
*arXiv:2512.12236*
- **Prompt triage: Structured optimization enhances vision-language model performance on medical imaging benchmarks**  
Arnav Singhvi, Vasiliki Bikia, **Asad Aali**, Akshay S. Chaudhari, Roxana Daneshjou  
*arXiv:2511.11898*
- **Conditional prior-based non-stationary channel estimation using accelerated diffusion models**  
Muhammad Ahmed Mohsin, Ahsan Bilal, Muhammad Umer, **Asad Aali**, Muhammad Ali, et al  
*arXiv:2509.15182*
- **Splitwiser: Efficient LM inference with constrained resources**  
**Asad Aali**, Adney Cardoza, Melissa Capo  
*arXiv:2505.03763*
- 2024 ■ **Automated detection of underdiagnosed medical conditions via opportunistic imaging**  
**Asad Aali**, Andrew Johnston, Louis Blankemeier, Dave Van Veen, Laura T Derry, et al  
*arXiv:2409.11686*

## Invited Talks

- 2025 ■ **MedVAL: Medical Text Validation with Language Models**  
*NeurIPS GenAI4Health*, San Diego  
*Workshop on Machine Learning for Health*, Apple  
*Biomedical Informatics Research Colloquium*, Stanford University  
*AIMI Academic × Industry Connections Mixer*, Stanford University  
*IBIIS and AIMI Retreat*, Stanford University  
*AI+Biomedicine Seminar*, Stanford University  
*Radiological Sciences Lab*, Stanford University  
*Trustworthy AI Research Lab*, Stanford University  
*Daneshjou Lab*, Stanford University
- **Structured Prompting Enables Robust Evaluation of Language Models**  
*Machine Learning for Health (ML4H)*, San Diego
- **LLM Hallucinations: Causes, Detection, and Mitigation**  
*IBIIS Journal Club*, Stanford University
- **Optimizing Clinical Workflows using Language Models**  
*Guest Lecture*, Austin Community College
- **Advancing Healthcare with Machine Learning**  
*Research Talk*, HOPPR
- 2024 ■ **Detecting Underdiagnosed Conditions via Opportunistic Imaging**  
*Radiology Retreat*, Stanford University
- **Splitwiser: Efficient LM Inference with Constrained Resources**  
*Lecture*, UT Austin
- **Generative Priors for Accelerated MRI Reconstruction**  
*Guest Lecture*, Austin Community College
- **Accelerated Multi-Coil MRI Reconstruction**  
*ECE Outstanding Student Series*, UT Austin
- **GSURE Denoising for Accelerated Multi-Coil MRI Reconstruction**  
*ISMRM*, Singapore

## Invited Talks (continued)

- 2023
- **Hospital Course Summarization with Adapted Large Language Models**  
*Research Showcase, Amazon*
  - **MIMO Channel Estimation with Priors learned from Noisy Data**  
*6G@UT Conference, UT 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*
- 2022
- **MIMO Channel Estimation using Score-Based Generative Models**  
*6G@UT Conference, UT Austin*

## Reviewer

- **Journals:** *npj Digital Medicine, Circulation, Nature Scientific Reports*
- **Conferences:** *CVPR, ECCV, ACL, ML4H*

## Past Experience

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| 2022 – 2024 | ■ <b>Graduate Research Assistant</b> , UT Austin     |
| 2024 – 2024 | ■ <b>Graduate Teaching Assistant</b> , UT Austin     |
| 2023 – 2023 | ■ <b>Machine Learning Intern</b> , Amazon            |
| 2022 – 2022 | ■ <b>Machine Learning Intern</b> , Dell Technologies |
| 2020 – 2021 | ■ <b>Data Analyst</b> , Plutus21 Capital             |
| 2019 – 2020 | ■ <b>Data Analyst</b> , EZOfficeInventory            |