Jay Shah

✉ jgshah1@asu.edu
⌂ Homepage
○ GitHub   in LinkedIn   🎓 GScholar

▬▬▬ Education

2020–Present	**Ph.D. in Computer Science**, *Arizona State University*, GPA: 3.9/4.0. Research Area: Deep Learning, Computer Vision, Medical Imaging Advisors: Teresa Wu and Baoxin Li
2018–2020	**M.S. in Computer Science**, *Arizona State University*, GPA: 3.8/4.0.
2014–2018	**B.Tech. in Information and Communication Technology**, *Dhirubhai Ambani Institute of Information and Communication Technology*, GPA: 7.45/10.0.

▬▬▬ Experience

May–Aug'24	**Dolby Laboratories**, Ph.D. Research Intern. Working in Multi-modal Processing Team within the Advanced Technology Group
May'20–Present	**Arizona State University**, Research Assistant. Working on Anomaly detection and Super-Resolution in medical imaging, brain age prediction, genome analysis using deep learning, and biomarker discovery in Alzheimer's disease and Headache disorders.
May–Aug'22	**Amazon**, Research Scientist Intern. Developed a deep learning based marker-less biomechanical analysis tool for human workouts using Human body Pose and Shape Estimation.
Dec–May'20	**Arizona State University**, Grad Research & Teaching Assistant. Worked under Dr. Frank Wilczek, Nobel Laureate in Physics, on using Machine Learning for Art Authentication & Teaching Assistant in Dept. of Computer Science.
Jun–Aug'19	**Philips Research Labs**, Research & Development Intern. Worked on contactless patient monitoring and vitals measurement tool using Deep Learning.
Jan–May'18	**HackerRank**, Machine Learning Engineer Intern. Built real-time systems for monitoring user feedback using Machine Learning (ML) and curated coding challenges and tutorials for ML interviews.
May–Aug'17	**Nanyang Technological University**, Visiting Undergrad Research Intern. Worked under Prof. Lin Weisi on exploring significance-based large-scale 3D point cloud compression and representation.

▬▬▬ Publications

In Conference Proceedings

2024	Jay Shah, Md Mahfuzur R. Siddiquee, Yi Su, Teresa Wu, and Baoxin Li. Ordinal classification with distance regularization loss for robust brain age prediction. *WACV*, 2024.
2024	Md Mahfuzur R. Siddiquee, Jay Shah, Teresa Wu, et al. Brainomaly: Unsupervised neurologic disease detection utilizing unannotated t1-weighted brain mr images. *WACV*, 2024.
2022	Md Mahfuzur R. Siddiquee, Jay Shah, Teresa Wu, et al. Healthygan: Learning from unannotated medical images to detect anomalies associated with human disease. In *MICCAI SASHIMI*, 2022.

Journal Articles

2023	Jay Shah, Md Mahfuzur R. Siddiquee, Janina Krell-Roesch, et al. Neuropsychiatric symptoms and commonly used biomarkers of alzheimer's disease: A literature review from a machine learning perspective. *Journal of Alzheimer's Disease*, 2023.
2023	Md Mahfuzur Rahman Siddiquee, Jay Shah, et al. Headache classification and automatic biomarker extraction from structural mris using deep learning. *Brain Communications*, 2023.
2022	Jay Shah, Fei Gao, Baoxin Li, et al. Deep residual inception encoder-decoder network for amyloid pet harmonization. *Alzheimer's & Dementia*, 2022.

Communicated Articles

2024 Yiming Che, Fazle Rafsani, Jay Shah, Md Mahfuzur R. Siddiquee, Teresa Wu, AnoFDM: Anomaly Detection with Forward Process of Diffusion Models for Medical Images, *MICCAI,* 2024.

2024 Jay Shah, Yiming Che, Teresa Wu, Image guided PET super-resolution to improve Amyloid PET quantification using latent diffusion models, *MICCAI,* 2024.

2023 Jay Shah, Jeremy Syrjanen, Janina Krell-Roesch, et al., Predicting cognitive decline from neuropsychiatric symptoms and Alzheimer's disease biomarkers: A machine learning approach using population-based data, *Alzheimer's & Dementia*.

2023 Maitry Trivedi, Amogh Manoj Joshi, Jay Shah, Benjamin Readhead, et al., Interpretable deep learning framework towards understanding molecular changes associated with neuropathology in human brains with Alzheimer's disease, *Alzheimer's & Dementia*.

Conference Abstracts

2024 (**Oral presentation**) Jay Shah, Md Mahfuzur R. Siddiquee, Catherine Chong, et al. Capturing mri signatures of brain age as a potential biomarker to predict persistence of post traumatic headache. In *AAN and NIH HEAL Annual Meeting*, 2024.

2024 Md Mahfuzur R. Siddiquee, Jay Shah, Catherine Chong, et al. Applying generative adversarial network on structural brain mri for unsupervised classification of headache. In *AAN and NIH HEAL Annual Meeting*, 2024.

2024 Amogh Joshi, Md Mahfuzur R. Siddiquee, Jay Shah, Catherine Chong, et al. Prediction of headache improvement using multimodal machine learning in patients with acute post-traumatic headache. In *AAN and NIH HEAL Annual Meeting*, 2024.

2023 Jay Shah, Jeremy Syrjanen, Janina Krell-Roesch, et al. Participant-specific interrogation of population-based data to predict cognitive decline from neuropsychiatric symptoms and neuroimaging biomarkers: A machine learning approach (p12-6.001). *Neurology*, 2023.

2023 Jay Shah, Javad Sohankar, Ji Luo, Yinghua Chen, et al. A 2.5 d residual u-net for improved amyloid pet harmonization preserving spatial information. *Alzheimer's & Dementia*, 2023.

2023 Jay Shah, Ji Luo, Javad Sohankar, Eric Reiman, et al. A multi-class deep learning model to estimate brain age while addressing systematic bias of regression to the mean. *Alzheimer's & Dementia*, 2023.

2023 Amogh Joshi, Jay Shah, Benjamin Readhead, et al. Interpretable deep learning framework towards understanding molecular changes associated with neuropathology in human brains with alzheimer's disease. *Alzheimer's & Dementia*, 2023.

2022 Jay Shah, Valentina Ghisays, Yinghua Chen, et al. Mri signatures of brain age in the alzheimer's disease continuum. *Alzheimer's & Dementia*, 2022.

2022 Md Mahfuzur R. Siddiquee, Jay Shah, Todd Schwedt, Catherine Chong, et al. Classification of post-traumatic headache using deep learning on structural brain mri data. In *HEADACHE*, 2022.

Patents

2022 (WO2023/101959A1) Deep Residual Inception Encoder-Decoder Network for Amyloid PET Harmonization, 12/01/2022, Fei Gao, Yi Su, Jay Shah, Teresa Wu.

Skills

Programming	Python, C/C++, Java, Matlab, SQL, Shell Scripting
Deep Learning	PyTorch, TensorFlow, Keras, R-Studio, Tableau, scikit-learn, NLTK, OpenCV
WebD	HTML/CSS, Javascript, d3, Google Compute and App Engines, AWS, MySQL, PostgreSQL
Relevant Coursework	Human Aware-AI, Digital Image Processing, Vision & Language Frontiers, Game Theory Algorithms and Applications, Natural Language Processing, Theoretical Computer Science, Fundamentals of Statistical Learning, Data Mining, Software Design, Cloud Computing, Distributed Database Systems

Invited Talks and Highlights

Feb'24   Heard on the Street – 2/15/2024, ⬀*InsideBigData*.

Oct'23   Chip industry strains to meet AI-fueled demands-will smaller LLMs help?, ⬀*ComputerWorld*.

Jun'23   Invited speaker on PhD student Panel, *Summer Research Initiative, ASU*.

Oct'22   Invited Young Professional speaker, *IEEE IAS Annual Meeting, Detroit*.

Mar'22   Using AI to battle Alzheimer's, ⬀*FullCircle, ASU*, ⬀*ASU News*.

Jun'22   Fulton School CS Doctoral student & researcher explores the quickly evolving world of AI and related smart tech advances on popular podcast, ⬀*FullCircle, ASU*.

Nov'21   Three Ways Deep Learning Yields New Insights for Medical Researchers, ⬀*IEEE Transmitter*.

Oct'21   Deep Residual Inception Encoded-Decoder Network for Amyloid PET Harmonization, *Alzheimer's Imaging Consortium Spotlight Webinar, Neuroimaging PIA*.

Oct'21   Landscape of Interpretable AI, its limitations and glance at Shapley Values, ⬀*Emerging Research Topics in Engineering, IEEE Gujarat Section*.

Sep'21   Landscape of Explainable AI, interpreting DL predictions and observations from hosting an ML podcast, ⬀*4th OnCV&AI workshop, Nordling Lab, National Cheng Kung University in Taiwan*.

Jun'21   From DAIICT to ASU and working with Nobel Laureate Frank Wilczek, ⬀*DAIICT Blog*.

Sep'21   How AI could revolutionize biology-and vice versa, ⬀*AXIOS*.

Apr'21   Scaling up a technical podcast, ⬀*IEEE Spectrum*.

Apr'21   Behind the scenes with Machine Learning Expert, ⬀*Curryup Leadership Podcast*.

Mar'22   Workshops, *ASU's AI Club*, on Python Basics ⬀*2020*, and CNNs ⬀*2020*, ⬀*2021*.

Services and Awards

- **Journal Reviewer**: ACM TIST, Alzheimer's & Dementia, Frontiers In Aging Neuroscience
- **Conference Reviewer**: MICCAI'23-24, MIDL'24, AAIC'22-24, ICLR'24 MLGenX, ICHI'24
- **Organizing**: INFORMS'23 (Session Chair)
- Graduate Research Assistantship, ASU (May'20 - Present)
- National Institute of Health (NIH) Travel Award, ASU (Dec'23)
- GPSA Travel Award, ASU (Dec'23)
- Graduate College Travel Award, ASU (Oct'23)
- Travel Grant, Alzheimer's Association International Conference (2021)
- ⬀IEEE Impact Creator Award
- Travel Grant, CVPR (2019)
- Travel Grant, IEEE-IAS Annual Meeting Ex-Com (2017, '18, '19)

Leadership Activities

- AI Podcast Host (*5,000+ subscribers, 200K+ downloads*) ▶ YouTube
  Media mentions:
  - 20 best Machine Learning Podcasts of 2021 ⬀Welp Magazine
  - A hand-curated list of the best AI Podcasts ⬀AI Depot
  - 5 Best Machine Learning & AI Podcasts ⬀Unite dot AI
  - 8 of the best machine learning podcasts to listen to in 2022 ⬀Qwak MLOps
- IEEE-IAS Subcommittee Chair (Aug'18 - Aug'22)
- Technical Director, AI Club, ASU (Jan'20 - Dec'21)
- Chairperson, IEEE-IAS DAIICT (Jan'17 - Dec'17)