Jay Shah

✉ jgshah1@asu.edu
Homepage
GitHub LinkedIn GScholar

Education

2020–2025 **Ph.D. in Computer Science**, *Arizona State University*, GPA: 3.9/4.0.
Research Area: Deep Learning, Computer Vision, Medical Imaging
Advisors: Drs. 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'20–Present **Arizona State University**, *Research Assistant.*
Research: 3D computer vision, anomaly detection, image super-resolution, and synthesis
Application: Deep learning based early detection of neurological disorders

May–Aug'24 **Dolby Laboratories**, *Research Intern.*
Context-aware Music Recommendations using multimodal scene data and large language models (LLMs)
Manager: Andrea Fanelli

May–Aug'22 **Amazon**, *Research Scientist Intern.*
Deep learning-based marker-less biomechanical analysis of human workouts using Human Pose Estimation
Manager: Yaar Harari

Dec–May'20 **Arizona State University**, *Grad Research & Teaching Assistant.*
Machine Learning (ML) for Art Authentication & Teaching Assistant in Dept. of Computer Science
Advisors: Profs. Frank Wilczek (Nobel Laureate in Physics), Nathan Newman

Jun–Aug'19 **Philips Research Labs**, *Research & Development Intern.*
Contactless patient monitoring and vitals measurement tool using deep learning
Managers: Kees van Zon, Haibo Wang

Jan–May'18 **HackerRank**, *Machine Learning Engineer Intern.*
Real-time user-feedback analysis using ML, curated coding challenges for ML interviews
Manager: Heraldo Memelli

May–Aug'17 **Nanyang Technological University**, *Research Intern.*
Research on significance-based large-scale 3D point cloud compression and representation
Advisor: Prof. Lin Weisi

Publications

In Conference Proceedings

2024 Jay Shah, MMR Siddiquee, Yi Su, Teresa Wu, and Baoxin Li. Ordinal classification with distance regularization loss for robust brain age prediction. *WACV*, 2024.

2024 MMR Siddiquee, Jay Shah, Teresa Wu, et al. Brainomaly: Unsupervised neurologic disease detection utilizing unannotated t1-weighted brain mr images. *WACV*, 2024.

2022 MMR 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

2024 Jay Shah et al. Predicting cognitive decline from neuropsychiatric symptoms and ad biomarkers: A machine learning approach using population-based data. *Journal of Alzheimer's Disease*, 2024.

2024 Jay Shah, Yiming Che, Javad Sohankar, Ji Luo, Baoxin Li, Yi Su, and Teresa Wu. Enhancing amyloid pet quantification: Mri-guided super-resolution using latent diffusion models. *Life*, volume 14, 2024.

2024 Maitry Trivedi, Amogh Joshi, Jay Shah, et al. Interpretable deep learning framework towards understanding molecular changes associated with neuropathology in human brains with ad. *npj Aging*, 2024.

2023 Jay Shah, MMR Siddiquee, et al. Neuropsychiatric symptoms and commonly used biomarkers of ad: A literature review from a machine learning perspective. *Journal of Alzheimer's Disease*, 2023.

2023 MMR Siddiquee, Jay Shah, Catherine Chong, 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

2025 Fazle Rafsani, Devam Sheth, Yiming Che, Jay Shah, et al., Using Large-scale Contrastive Language-Image Pre-training to Maximize MRI-based Headache Classification, *Brain Communications,* 2025.

2025 Amogh Joshi, Yiming Che, Jay Shah, et al., Enhanced Traumatic Brain Injury Recovery Classification with Harmonized Brain MRI and CT, *Brain Communications,* 2025.

2024 Yiming Che, Fazle Rafsani, Jay Shah, et al., AnoFPDM: Anomaly Detection with Forward Process of Diffusion Models for Medical Images, *WACV,* 2025.

2024 Bettina Barisch-Fritz, Jay Shah, Jelena Krafft, et al., Physical activity and the outcome of cognitive trajectory: a machine learning approach, *European Reviews of Aging & Physical Activity,* 2024.

Selected Conference Abstracts

2024 (**Oral presentation**) Jay Shah, MMR Siddiquee, et al. Capturing mri signatures of brain age as a potential biomarker to predict persistence of pth. In *AAN & NIH HEAL Annual Meeting*, 2024.

2024 MMR Siddiquee, Jay Shah, et al. Applying gan on structural brain mri for unsupervised classification of headache. In *AAN & NIH HEAL Annual Meeting*, 2024.

2024 Amogh Joshi, MMR Siddiquee, et al. Prediction of headache improvement using multimodal machine learning in patients with acute pth. In *AAN & NIH HEAL Annual Meeting*, 2024.

2023 Jay Shah, Ji Luo, 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.

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

Patents

2024 (filed) User-guided context-aware music recommendations, 08/05/2024, Jay Shah, Shanti Stewart, Gauri Jagatap, Gouthaman KV, Andrea Fanelli.

2022 (US20240285244A1, WO2023101959A1) 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

ML 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, Fund. of Statistical Learning, Data Mining, Software Design, Cloud Computing, Distributed Database Systems

Invited Talks and Highlights

Apr'24 AI-powered medicine, *ASU News.*

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.*

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 Learning based 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**: CVPR'25, MICCAI'23-24, MIDL'24-25, AAIC'22-24, ICLR'24, 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 (*6,000+ subscribers, 250K+ 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)