WASIF JALAL

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EDUCATION

Arizona State University — Tempe, AZ
PhD in Computer Science (Advisor: Dr. Asif Salekin) — May 2026 – Present

Bangladesh University of Engineering and Technology — Dhaka, Bangladesh
Bachelor of Science in Computer Science and Engineering — Feb 2020 – Mar 2025

RESEARCH POSITIONS

School of Biological and Health Systems Engineering (Arizona State University) — May 2026 – present
Graduate Research Assistant (Ubiquitous and Intelligent Sensing Lab)

Research & Innovation Center (Bangladesh Univ. of Eng. & Tech.) — Feb – Apr 2025
Machine Learning Engineer (Identification of dengue breeding sites through object recognition)

Next Generation Computing Research Group (Dept. of CSE, Bangladesh Univ. of Eng. & Tech.) — 2022 – Feb 2025
Research Student Assistant (On-site data collection, experimentation, and design)

RESEARCH PROJECTS

Google Scholar

Reducing the Adaptation Gap Through Reachable Fisher Geometry — Jul 2026 – present
- Under review at the International Conference on Learning Representations (2027); supervised by Dr. Asif Salekin, ASU
- Developed a Fisher-information-based framework to analyze and mitigate subgroup performance disparities during parameter-efficient fine-tuning (PEFT)
- Evaluated the approach across hundreds of trained models, demonstrating that reachable-Fisher trace matching can reduce subgroup performance gaps across diverse experimental settings

Transformer-CNN Hybrid for Explainable Modeling of Brain Aging from 3D MRI — Dec 2024 – Feb 2026
- Under review at *Neural Networks* (Elsevier) Supervised by Dr. M. Sohel Rahman, Bangladesh Univ. of Eng. & Tech.
- Curated over 7000 T1-weighted MRI images from 15 datasets to estimate brain-age using transformer-CNN architectures
- Achieved results better than state-of-the-art studies on the same dataset

ORANGE : Modeling Tissue-Specific Aging Using Machine Learning — Dec 2023 – Mar 2025
- Published in *Briefings in Bioinformatics* (OUP), supervised by Dr. M. Sohel Rahman, Bangladesh Univ. of Eng. & Tech.
- Estimated tissue-specific age based on gene expression values in over 10,000 samples from around a thousand subjects from the Adult GTEx bulk-tissue expression dataset, using machine learning models
- Determined correlation between irregular aging patterns and mortality, and explored statistical trends in aging

AWARDS AND SCHOLARSHIPS

University Graduate Fellowship — Jun 2026
School of Computing and Augmented Intelligence, Arizona State University

Undergraduate Dean's List Scholarship — Jan 2021
Bangladesh University of Engineering and Technology

SKILLS AND INTERESTS

Deep Learning & Computer Vision: Transformers, Vision transformers, Low-resource architectures, 3D image processing
Trustworthy AI and Fairness: Parameter-efficient fine tuning, Loss-landscape curvature geometry

Data Science & Machine Learning: Python, NumPy, scikit-learn, Pandas, PyTorch, Torchvision, TensorFlow
Full-Stack Development: Web back ends with Node.js; Front ends with ReactJS, Svelte; Flutter (cross-platform mobile apps)

REFERENCES

Dr. Asif Salekin
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