SAJID **ALI**

Explainable AI Researcher | Data Analyst & Processing

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A Ph.D. researcher with the Department of Electrical and Computer Engineering at Sungkyunkwan University is enthusiastic, creative, and passionate about using explainable AI in practical applications. My current research explores explainable methods to propose a trustworthy clinical decision support system by analyzing medical data.

Experience

Present – March 2019 | Ph.D. Researcher (InfoLab), Sungkyunkwan University, South Korea

- Medical data analysis for Alzheimer's and Parkinson's Disease diagnosis and progression detection using machine learning and deep learning.
- Develop a trustworthy clinical decision support system in the medical domain.
- Fusion of information and multitasking analysis.

Medical data analysis | Explainable AI | Alzheimer's and Parkinson's Disease | Information Fusion | Time-series analysis

Present – July 2021 | MATLAB Programmer (The HA Lab), Incheon University, South Korea

- Process the microscopic image acquire at different channels.
- Match the molecules from one channel to another channel. Perform image segmentation and threshold, count the matched molecules, and other performance metrics.
- Expose to different MATLAB tools and functions such as App design, image registration, transformation, image segmenter, etc.

Image processing | Image segmentation & threshold | Post-analysis | MATLAB App designer

June 2021 – November 2020 | Image Analyst and AI Researcher (part-time), Chowis Company, South Korea

- Collecting the skin and hair images using the DermoPICO device.
- Analyze the images for wrinkles, pores, keratine, and sebum.
- Explore the standard measures for skin and hair. Prepare the procurement form and documentation.
- Improve the computation speed of the algorithms by transforming them to GPU.
- Proposed a new skin PH analysis algorithm.

Data collection and analysis | Image Processing | OpenCV | Cloud testing | Application testing

November 2016 – January 2015 | Research Participation, Osmania University, Hyderabad, India

- Accomplished master's thesis under the supervision of a research assistant at the university.
- Exposed to research environment - acquired brain signal (EEG) from Emotiv EPOC device with an Arduino interface, process the data using MATLAB SSVEP tool, and python programming.
- Built a 2R robotic arm based on brain-computer Interface.

Thesis | Research | SSVEP tool | EEG signal | Robotic arm

Teaching and Mentoring

May 2018 – July 2017 | Assistant Professor, NMR Engineering College, Hyderabad, India

- A part of the mechanical engineering department at NMR engineering college. CERTIFICATION
- Teach various undergraduate courses (robotics, fluid mechanics, kinematic and dynamic of the machine, etc.)
- Supervise an undergraduate group of students in their final semester.
- Lead the class of an engineering workshop, engineering drawing, and helped in designing the laboratory experiments.

Academic | Teaching & Research

Achievements

- 2021 Have been selected for the ICT Masterpiece Talent Cultivation Project Group from November 2021 to December 2022.
- 2019 Have been receiving STEM scholarship to pursue Ph.D. until today.
- 2015 Awarded Professor Abid Ali Memorial Scholarship at Osmania University for obtaining the highest grade.
- 2014 Honoured with the All India Council for Technical Education (AICTE) fellowship for pursuing the master's degree.

Competences

Programmation	**MATLAB** , C, Python, OpenCV, and Assembly language (Keil & Arduino).
Frameworks	MATLAB & Simulink, TensorFlow, Keras, and PyTorch.
Operating Systems	Windows 11/10/8/7 and Ubuntu 21/20/18/16.
utilities	Office 365 (Word, Excel, Powerpoint), Adobe, and Overleaf.
Tools	FreeSurfer, FSL, SPM, AFNI, and Various MATLAB Tools.
Other	Teaching, FileZilla, SSH, and GitHub

Academic Background

2014∼2017 **Master of Engineering in Mechanical Engineering (Spec - Automation & Robotics)** from Osmania University, Hyderabad, India with a percent of **84.13/100**

2010∼2014 **Bachelor of Technology in Mechanical Engineering** from SR University (former affiliation JNTU, Hyderabad, India with a percent of **81.12/100**

Certifications

2021 MATLAB for Data Processing and Visualization - the self-paced training course. CERTIFICATION

2022 KIC TECH Frontier Program - Univesity of California Berkeley. CERTIFICATION

Published Works

2022 **Ali, Sajid**, Shaker El-Sappagh, Farman Ali, Muhammad Imran, and Tamer Abuhmed. "Multitask Deep Learning for Cost-Effective Prediction of Patient's Length of Stay and Readmission State Using Multimodal Physical Activity Sensory Data." IEEE Journal of Biomedical and Health Informatics 26, no. 12 (2022) : 5793-5804.

2022 **Ali, Sajid**, Omar Abusabha, Farman Ali, Muhammad Imran, and Tamer ABUHMED. "Effective Multitask Deep Learning for IoT Malware Detection and Identification Using Behavioral Traffic Analysis." IEEE Transactions on Network and Service Management (2022).

2022 Junaid, Muhammad, **Sajid Ali**, Isma Farah Siddiqui, Choonsung Nam, Nawab Muhammad Faseeh Qureshi, Jaehyoun Kim, and Dong Ryeol Shin. "Performance Evaluation of Data-driven Intelligent Algorithms for Big data Ecosystem." Wireless Personal Communications 126, no. 3 (2022) : 2403-2423.

2022 Yoon, Jiyoung, Muhammad Junaid, **Sajid Ali**, and Jongwuk Lee. "Abstractive Summarization of Korean Legal Cases using Pre-trained Language Models." In 2022 16th International Conference on Ubiquitous Information Management and Communication (IMCOM), pp. 1-7. IEEE, 2022.

2023 Wang, Bojun, **Sajid Ali**, Xinyi Fan, and Tamer Abuhmed. "Real-time human detection and behavior recognition using low-cost hardware." In 2023 17th International Conference on Ubiquitous Information Management and Communication (IMCOM), pp. 1-8. IEEE, 2023.

2023 Rahim, Nasir, Shaker El-Sappagh, **Sajid Ali**, Khan Muhammad, Javier Del Ser, and Tamer Abuhmed. "Prediction of Alzheimer's progression based on multimodal Deep-Learning-based fusion and visual Explainability of time-series data." Information Fusion 92 (2023) : 363-388.

On-going Publications

2022 **Sajid Ali**, Shaker El-Sappagh, Javier Del Ser, Tamer Abuhmed, Francisco Herrera, Khan Muhammad "Explainable Artificial Intelligence (XAI) : What we know and What is Left to realize Trustworthy, Accountable, Ethical and Governable Artificial Intelligence", Journal of Information Fusion, [revision]

2022 **Sajid Ali**, Muhammad Junaid, Farman Ali, Imran Muhammad, Tamer ABUHMED "FedADCare : Towards Privacy-enabled Federated Learning for Personalized Alzheimer's Disease Healthcare", IEEE Transactions on Computational Social Systems, [returned]

2022 **Sajid Ali**, Nasir Rahim, Shaker El-Sappagh, Tamer ABUHMED, "FairXAI - ROI-based Ensembling Deep Model for Late Mild Cognitive Prediction using Segmented Brain Regions of MRI Sequences", IEEE Transactions on Neural Network and Learning System, [returned]

2021 **Sajid Ali**, Nasir Rahim, Farman Ali, Imran Muhammad, Tamer ABUHMED "Multimodal Model-agnostic Meta-learning for Alzheimer's Disease Progression Detection based on Patients Longitudinal Data", IEEE Computational Intelligence Magazine, [returned]

2022 Muhammad Junaid, **Sajid Ali**, Fatma EID, Shaker El-Sappagh, Tamer Abuhmed, "Explainable Machine Learning Models based on Multimodal Time-Series Data for the Early Detection of Parkinson's Disease", Computer Methods and Programs in Biomedicine, [revised]

Languages

English ●●●●●
Hindi ●●●●●
Urdu ●●●●●
Korean ●●○○○

Strength

- Innovative, Critical observation
- Patience, Smart work
- Quick learner, Motivator
- Helping, Friendly

Interest

Relaxation : Sleep, movie, social media, photography, guitar
Sport : Cricket, volleyball, badminton, hiking, cycling, traveling