Adil Ahmad

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Adil Ahmad Scholar Link
GitHub

Profile

Research-focused Data Scientist skilled in machine learning, deep learning, NLP, and advanced AI model development for impactful solutions.

Education

MS **National University of Computer and Emerging Science**, Data Science — Aug 2021 – Dec 2023
- GPA: 3.01/4.00(Verify)
- **Coursework:** Data Science Tools & Technique, Machine Learning, Deep Learning, Natural Language Processing, Big Data Analytics

BS **Islamia College University, Peshawar**, Computer Science — Aug 2016 – Dec 2020
- GPA: 3.45/4.00
- **Coursework:** Web Development, Networking, Database management, Programming, Software engineering, Systems analysis

Experience

National University of Modern Languages (NUML), Lecturer CS — Peshawar, Pakistan, Feb 2025 – **Working**
- Deliver lectures and practical sessions in computer science subjects, ensuring comprehensive coverage of core areas such as programming languages, operating systems, and computer networks

Faculty Research Support Grant Project (FAST NUCES), Researcher — Peshawar, Pakistan, Feb 2025 – **Working Remotely**
- Cyber-Resilient Task Offloading in IoVs: A Deep Reinforcement Learning Approach with Thompson Sampling and Bayesian Optimization for Secure Resource Management

Salman bin Abdulaziz University, Technical Research Consultant **Remote** — Saudi Arabia, April 2025 – Dec 2025
- Define research objectives, questions, and methodologies.
- Develop proposals, project plans, and timelines.

National Centre of AI (NCAI), Research Assistant — Islamabad, Pakistan, April 2024 – Jan 2025
- Extensive experience developing machine learning models using complex datasets and optimising predictive methodologies.
- Working in data querying, scripting languages, and statistical tools like Python and Matlab.

University of South-Eastern, Norway, Early Stage Researcher (Secondment) — Borre, Norway, November 2024
- Address ML challenges to improve safety and efficiency in industries.
- Develop training algorithms to enhance human-machine interaction across industries.

FAST NUCES, Research Assistant — Peshawar, Pakistan, Sep 2023 – Nov 2024
- Design and deploy ML models to address security challenges effectively.
- Analyse structured and unstructured data to identify patterns and insights.
- Develop methods for detecting and mitigating backdoors in neural networks.

FAST NUCES, Lab Instructor — Peshawar, Pakistan
Aug 2023 – Dec 2023

- Teaching Programming with Practical Work.
- Teaching Database with practical work.
- Teaching ICT with practical work.

NADRA, Technical Support Officer — Swabi, Pakistan
Jan 2023 – April 2023

- Provide technical support for Digital Census 2023.
- Collecting and analyzing data.
- Preparing progress reports.

NAVTTC, IT Instructor — Swabi, Pakistan
Aug 2021 – Sep 2022

- Assessing students fairly on course material, projects, and exams.
- Preparing student practical progress reports.

Publications

GraphGuard: An Adaptive Approach for Restoring Accuracy in Backdoor-Compromised GNNs

- Journal:Neural Network Journal **(Impact Factor: 6.3)** **Verify**
- ***First Author***

XAI-DTBD: Explainable Dynamic Threshold-based Backdoor Detection in Graph Neural Networks

- Journal: Neural Network **(Impact Factor: 6.3)** **Verify**
- ***First Author***

A Comprehensive Survey on the Convergence of Blockchain, Digital Twins, and Metaverse: Shaping the Future of Cybersecurity Frameworks

- Journal:Computers and Electrical Engineering **(Impact Factor: 4.9)** **Verify**
- ***First Author***

Towards Secure AI: Detection and Mitigation of Backdoor Attacks

- Journal: International Journal of Intelligent Computing and Cybernetics (IJICC) **(Impact Factor: 2.6)**
- ***First Author***

Pattern Matters: A Deep Learning Approach with Attention Mechanism for Text Abstraction in Low-Ranked Languages

- Journal:Springer Nature: Multimedia Tools and Applications**(Impact Factor: 3.6)** **Verify**
- ***First Author***

Interpretable Multi-Model Deep Learning Framework for Automated Four-Class Diagnosis of Ocular Toxoplasmosis Using Fundus Imaging

- Journal:Nature (Scientific Reports) **(Impact Factor: 3.9)** **Verify**
- ***Co-Author***

StressSpeak: A Speech-Driven Framework for Real-Time Personalised Stress Detection and Adaptive Psychological Support

- Journal:MDPI Diagnostics**(Impact Factor: 3.3)** **Verify**

- ***Co-Author***

Fortress Smart Grid 3.0: A Synergistic Security Framework

- Journal: Cluster Computing (Springer Nature) **(Impact Factor: 4.1)** ———————— **Under Review**
- ***Co-Author***

Projects

Task Allocation for any Complex Systems github.com/enalsis/

- Explicitly mentions stochastic modelling
- Aligns perfectly with resource planning & uncertainty

An Intelligent and Adaptive Cyber Resilience Framework (Currently Working) Research Project github.com/enalsis/

- This project aims to develop an intelligent and adaptive cyber resilience framework that anticipates and mitigates cyber threats before they impact systems

Three-way Decision with GTRS for Depression Prediction (Currently Working) Research Project github.com/enalsis/

- This project aims to develop and improve the current deep learning model result with Threshold selection and result boundary.

Backdoor Detection & Mitigation in Neural Network in Graph Neural Network (GNN) (FRSG Project) github.com/enalsis/

- Developed algorithms to detect and mitigate backdoors in neural networks.
- Evaluated diverse datasets and architectures to improve resilience against attacks.
- Designed mitigation strategies reducing backdoor threats without accuracy loss.

Medical Report Generation using LLM (Digital Human Project at NCAI, NUST) NCAI/Digital_Human

- Leveraged LLMs to automate and improve medical report generation accuracy.
- Fine-tuned models on specialised medical datasets for domain-specific relevance.
- Validated generated reports through expert feedback, ensuring clinical quality improvements.

Ocular Toxoplasmosis Published_Work

- Designed a deep learning pipeline using YOLO for toxoplasmosis detection.
- Combined multiple models to enhance robustness and detection accuracy.
- Fine-tuned pre-trained models to optimize performance and computation time.

Lumber Spine Compression Classification

- Built a deep learning model for lumbar spine compression classification.
- Enhanced diagnostic accuracy using CNN-based spine compression detection techniques.
- Improved robustness with data augmentation and efficient feature extraction methods.

Pattern Recognition in low-level language (MS Final Year Project)

- Performed Urdu text summarisation using an encoder-decoder with an attention mechanism.
- Identified patterns specific to low-level language features in Urdu.
- Improved summarisation quality by leveraging advanced deep learning architectures effectively.

Technologies

Languages: Python, C++, SQL, HTML

Technologies: Machine Learning, Deep learning, NLP, GenAI, RAG, LangChain

Developer Tools: MS Office, Tableau, Excel, Talend (ETL), Jupyter Notebook, LateX

Refrees

- **Dr. Anwar Shah (Assistant Professor)**
  Email: anwar.shah@nu.edu.pk
- **Dr. Taimoor Khan (Assistant Professor)**
  Email: taimoor.khan@nu.edu.pk
- **Dr. Bahar Ali (Associate Professor)**
  Email: baharali@imsciences.edu.pk
- **Dr. Muhammad Sajjad (Associate Professor)**
  Email: muhammad.sajjad@icp.edu.pk