Dr. Suhail Yousaf

ASSISTANT PROFESSOR · PRINCIPAL INVESTIGATOR

National Center of Artificial Intelligence, University of Engineering and Technology, Peshawar, Pakistan

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Industry and R&D Experience

National Center of Artificial Intelligence   *Peshawar, Pakistan*

PRINCIPAL INVESTIGATOR   *Jan. 2021 - Till date*

- Design and Development of Open National Seismic Catalog and Intelligent Earthquake Detection/Prediction System (Team: 01 Team Lead, 02 Research Associates, 02 Research Assistants, 01 Business Development Consultant)

National Center of Artificial Intelligence   *Peshawar, Pakistan*

CO-PRINCIPAL INVESTIGATOR   *Jul. 2017 - till date*

- Project: Smart Environment Monitoring (Team: 03 Research Associate/Assistants)
- Project: Smart Flood Prediction (Team: 03 Research Associate/Assistants)
- Project: Smart Earthquake Detection (Team: 01 Research Associate)
- Leading a program which has trained 70+ trainees on Deep Learning

Ultimus Pakistan   *Rawalpindi, Pakistan*

SOFTWARE QUALITY ASSURANCE ENGINEER   *Jul. 2004 - May 2005*

- Ultimus Inc. The U.S.A was a World Leader in Business Process Management and Workflow Automation. I served in its production branch based in Pakistan. I was primarily involved in black box testing, writing test cases, and developing scripts and GUIs in C# for testing of the modules assigned to me.

Remote Intelligent Monitoring Systems   *Rawalpindi, Pakistan*

SOFTWARE ENGINEER   *Apr. 2004 - Jun. 2004*

- I developed an automated multi-channel real-time audio logging software for the Pakistan Air Force to store audio signals captured during surveillance missions. Essentially, it was a distributed application where the multi-threaded server was interfaced with a National Instrument's multi-channel audio receiver module. The application was developed in MS Visual C++ (MFC and WinSock APIs).

Research and Teaching Experience

University of Engineering and Technology   *Peshawar, Pakistan*

ASSISTANT PROFESSOR(PROMOTED FROM LECTURER)   *2013 – till date*

- Successfully supervised 01 PhD dissertation research
- Successfully supervised 05 MSc dissertation research
- Supervised 15+ final year projects at undergrad level
- Undergraduate Semester Coordinator for 5+ years

Vrije Universiteit   *Amsterdam, The Netherlands*

PHD SCIENTIST   *2009 – 2013*

- Primarily conducted research on decentralized analysis of large volume of spatio-temporal data generated by a radio telescope. Developed distributed algorithms to detect rare events of interest assuming low-power wireless communication.
- Regularly published in various peer reviewed journals and international conferences, available at my Google scholar profile.
- Participated in teaching graduate and undergraduate courses.

University of Engineering and Technology   *Peshawar, Pakistan*

LECTURER   *2005 – 2007*

- Taught various courses at undergraduate level, mainly, programming related.

Education

Vrije Universiteit Amsterdam   *Amsterdam, The Netherlands*

PHD COMPUTER SCIENCE   *Sep. 2009 - Feb 2014*

- Specialization: Distributed analysis of Big Data
- Thesis title: The Design of a Cosmic-ray Detector as a Wireless Distributed System

Vrije Universiteit Amsterdam   *Amsterdam, The Netherlands*

MSc Computer Science   *Sep. 2007 - Aug. 2009*

- Specialization: Parallel and Distributed Computer Systems
- Thesis title: Effect of Mobility on Wireless Gossiping

Quaid-I-Azam University   *Islamabad, Pakistan*

MSc Computer Science   *Feb. 2002 - Mar. 2004*

- Specialization: Computer Science
- Project title: RIMS Trainers Data Acquisition and Control System

Major Research Grants and Awards

HEC-Nuffic Award   *HEC, Pakistan*

Scholarship   *2007 - 2013*

- Recipient of the HEC-Nuffic scholarship for MS-leading to PhD studies in The Netherlands.

Research Grant   *Planning Commission, Pakistan*

Co-principal Investigator   *Jul. 2017 - Jun. 2023*

- Grant to establish two of nine constituent labs of National Center of Artificial Intelligence. **Budget:** PKR 190.00 Million

Research Grant   *NCBC, Pakistan*

Principal Investigator   *Jan. 2021 - Jun. 2022*

- Design and Development of Intelligent Earthquake Detection/Prediction System. **Budget:** PKR 15.00 Million

Research Grant   *NRPU Research Grant, Pakistan*

Co-principal Investigator   *Jun. 2022 - Jan. 2023*

- Design and Development of Fake News Detection Framework for Urdu Language. **Budget:** PKR 6.0 Million

Research and Technical Skills

Areas of Interest	Artificial Intelligence/Deep Learning, Big data, Internet of Things, Edge-computing/Fog-computing
Languages	Python, Java, C, C++
Machine Learning	Tensorflow, Keras, PyTorch, Pandas, NLTK, NumPy, MatPlot, OpenCV, REST API, FLASK, Docker, GENSIM, MongoDB (different experience levels: proficient to familiar)
Internet of Things	Cloud IoT Core, Google for IoT applications, Raspberry Pi, Arduino, sensors interfacing, Zigbee, LoRa
Simulation Tools	OMNET++, Inet, MiXiM, NS-2

Courses & Certifications

Deep learning specialization   *Coursera, Online*

Personal development

- Neural Networks and Deep Learning
- Hyperparameter Tuning, Regularization and Optimization
- Structuring Machine Learning Projects
- Convolutional Neural Networks
- Sequence Models

AWS IoT: Developing and Deploying an Internet of Things   *Coursera, Online*

Personal development

- AWS IoT Core Services, Rules, Shadows, Communication, Security, Edge-computing, Analytics

Recent Publications

- Gul, S., Khan, G.M. and **Yousaf, S.** Multi-step short-term $PM_{2.5}$ forecasting for enactment of proactive environmental regulation strategies. Environmental Monitoring and Assessment 194, 386 (2022).
- R. Khan, **S. Yousaf**, A. Haseeb, M.I. Uddin, "Exploring a Design of Landslide Monitoring System", In Comxplexity (Hindawi), vol. 2021.
- W. Khan et al., "On the Performance of Temporal Stacking and Vegetation Indices for Detection and Estimation of Tobacco Crop," in IEEE Access, vol. 8, pp. 103020-103033, 2020.
- I. Ahmad, M. Yousaf, **S. Yousaf**, M. O. Ahmad, "Fake News Detection Using Machine Learning Ensemble Methods", Complexity, vol. 2020, Article ID 8885861, 11 pages, 2020.
- U. A. Shah, **S. Yousaf**, I. Ahmad and M. O. Ahmad, "On the Efficiency of Supernodal Factorization in Interior-Point Method Using CPU-GPU Collaboration," in IEEE Access, vol. 8, pp. 120892-120904, 2020.