Asif Hanif

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Trustworthy AI · Prompt Learning · Vision-Language Models · Audio-Language Models

Education

PhD 2021–2025
Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
- Computer Vision - CGPA 4.00

MS 2018-2020
Information Technology University (ITU), Lahore, Pakistan
- Electrical Engineering - CGPA 3.87

BS 2011-2015
University of Engineering & Technology (UET), Lahore, Pakistan
- Electrical Engineering - CGPA 3.42

Research Experience

Postdoc. Assoc. 2025 – Present
Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
- Developing conversational medical vision-language models

Machine/Deep Learning | Trustworthy AI | Vision-Language Models

Grad. Researcher 2021 – 2025
Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
- Studied the transferability of adversarial attacks in vision-language models
- Investigated the vulnerability of backdoor attacks in vision-language and audio-language models during the prompt learning phase
- Developed an efficient prompt-learning technique for audio-language models
- Explored the adversarial robustness of volumetric medical image segmentation models

Machine/Deep Learning | Adversarial Robustness | Trustworthy AI | Vision-Language Models | Audio-Language Models

Research Assoc. 2020 – 2021
Information Technology University (ITU), Lahore, Pakistan
- Conducted research on root cause analysis (RCA) and the identification of the most influential path (MIP) in Bayesian networks.

Machine/Deep Learning | Bayesian Networks | Root Cause Analysis | Causal Inference

Graduate Fellow 2018 – 2020
Information Technology University (ITU), Lahore, Pakistan
- Researched on parameter estimation in continuous Bayesian networks using deep learning
- Applied deep learning to solve inverse problems, including Fourier Ptychography

Machine/Deep Learning | Inverse Problems | Bayesian Networks | Root Cause Analysis

Research Asst. 2015 – 2018
Lahore University of Management Sciences (LUMS), Lahore, Pakistan
- Conducted research on non-obtrusive detection of concealed metallic objects using WiFi signals
- Explored through-wall human motion detection using CSI and horn antennas with WiFi signals
- Investigated non-invasive breathing rate estimation with channel state information (CSI)
- Developed intrusion detection methods leveraging CSI from WiFi radios
- Designed wireless sensing nodes using Intel 5300 WiFi cards

Wireless Sensing | Signal Processing | Machine/Deep Learning

Publications

TrojanWave : Exploiting Prompt Learning for Backdoor Attacks on Large Audio-Language Models†	EMNLP-2025
SPARTA : Spectral Prompt Agnostic Adversarial Attack on Medical Vision-Language Models†	MICCAI-2025
Noise is an Efficient Learner for Zero-Shot Vision-Language Models	ICCV-2025
On Frequency Domain Adversarial Vulnerabilities of Volumetric Medical Image Segmentation†	ISBI-2025
PALM : Few-Shot Prompt Learning for Audio Language Models†	EMNLP-2024
On Evaluating Adversarial Robustness of Volumetric Medical Segmentation Models	BMVC-2024
BAPLE : Backdoor Attacks on Medical Foundational Models using Prompt Learning†	MICCAI-2024

GUARDIAN : Guarding Against Uncertainty & Adversarial Risks in Robot-Assisted Surgeries — MICCAI-2024
Bird Whisperer : Leveraging Large Pre-trained Acoustic Model for Bird Call Classification — InterSpeech-2024
Frequency Domain Adversarial Training for Robust Volumetric Medical Segmentation† — MICCAI-2023
Detecting Propaganda Techniques in Code-Switched Social Media Text — EMNLP-2023
A Framework for Fault Diagnosis using Continuous Bayesian Network and Causal Inference† — INDIN-2021
Subsampled Fourier Ptychography using Pretrained Invertible and Untrained Network Priors — NeurIPS-2019
Adaptive Ptych : Leveraging Image Adaptive Generative Priors for Subsampled Fourier Ptychography — ICCV-2019
Non-obtrusive Detection of Concealed Metallic Objects using Commodity WiFi Radios† — IEEE GlobeComm-2018
WiSpy : Through-wall Movement Sensing and Person Counting using Commodity WiFi Signals† — IEEE Sensors-2018
Note : † indicates first-authored papers. For details, check my 𝔊 profile.

Teaching Experience

Teaching Asst. 2022-2025 — Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
- Advanced Topics in Vision and Language — Spring 2025
- Advanced Topics in Vision and Language — Spring 2024
- Foundations of Artificial Intelligence — Fall 2023
- Deep Learning — Spring 2023
- Foundations of Artificial Intelligence — Fall 2022

Teaching Asst. 2018-2020 — Information Technology University (ITU), Lahore, Pakistan
- Machine Learning — Spring 2020
- Signals & Systems — Fall 2019
- Solid State Electronics — Spring 2019
- Electromagnetic Field Theory — Fall 2018

Teaching Asst. 2015-2017 — Lahore University of Management Sciences (LUMS), Lahore, Pakistan
- Topics in RF Sensing — Fall 2017
- Topics in RF Sensing — Fall 2016
- Computer Organization and Assembly Language — Fall 2015

Skills

Programming Languages Python | C/C++ | MATLAB | R | Bash Scripting
Machine/Deep Learning PyTorch | Distributed Training | SLURM | NumPy | Pandas | Scikit-learn | Matplotlib | Hugging Face | OpenCV
IDEs Visual Studio | Pycharm | Jupyter Notebook
Miscellaneous Linux/Windows | LaTeX | Git | Github | AWS | Remote SSH

Achievements & Honors

Scholarship — Secured fully-funded scholarship for MS and PhD degrees based on academic standing and competitive exam (2018, 2021)
Writing — Actively wrote on university affairs as "Editor-in-Chief" for IET University Magazine (2011-2015)
Distinction — Secured overall 5_{th} rank in Higher Secondary School Exam (2011)
Distinction — Secured 1_{st} rank on district level in Secondary School Exam (2009)
Distinction — Winner/runner-up of "Science Quiz Competition" on division/provincial level respectively (2009)

Leadership & Volunteer Work

Trainer/Mentor 2021–2025 — Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
- Served as a Trainer for the "AI & Data for Leadership" program offered by the MBZUAI Professional Services team for various UAE-based entities
- Helped organize "Summer & Winter School" (2024) for high school students in MBZUAI
- Designed and conducted introductory lab session for "Under Graduate Research Internship Program" at MBZUAI (2023)
- Mentored MS students in research projects while serving as a Teaching Assistant for multiple courses

Volunteer 2011–2015	**Institute of Engineering & Technology (IET), UET Chapter, Lahore** › Active student member of IET UET Chapter › Served as Chair "Documentation & Information Publishing Team" of IET UET Chapter › Served as Chief Editor of "SPOTLIET" (a monthly news journal of IET UET Chapter) › Organized a workshop on LaTeX usage for students › Volunteered for multiple workshops organized by the IET UET Chapter on various occasions

Interests

Traveling & Nature Enthusiast | Sports | Current Affairs & Documentaries | Philosophy