

# Hassan Ahmed

Instructor, Department of Computer Science, FAST - NUCES, CFD Campus, Pakistan

hassan.ahmed@nu.edu.pk (Work) | +92-41-111-128-128 Ext: 272

mianhassaan1166@gmail.com (Primary) | +92-302-019-5050 (Mobile)

 hassanahmed1166 |  hassanahmed1166.github.io |  Google Scholar

Office # G-19, Department of Computer Science, FAST - NUCES, CFD Campus, Pakistan

## EDUCATION

### •Master of Science in Computer Science

2022 - 2024

University of Wah, Wah Cantt, Pakistan

CGPA: 3.46/4.0

- **Thesis:** DeepCAN: A Robust Deep Learning Framework for CAN Intrusion Detection in Autonomous Vehicles
- **Supervisor:** Professor Dr. Wazir Zada Khan
- **Coursework:** Advance Image Processing, Advanced Machine Learning, Advanced Network Security, Information Security, Research Methodologies, Advanced Operating Systems

### •Bachelor of Science in Software Engineering

2018 - 2022

COMSATS University Islamabad, Wah Campus, Pakistan

CGPA: 3.01/4.0

- **Thesis:** Lone Ranger - First Person Shooting Game
- **Supervisor:** Ms. Mehwish Mukhtar
- **Selected Coursework:** Introduction to Data Science, Data Warehousing and Data Mining, Human-Computer Interaction, Artificial Intelligence, Statistics and Probability Theory, Linear Algebra, Digital Logic Design, Database Systems, Software Quality Engineering, Software Testing, Object Oriented Software Engineering

## EXPERIENCE

### •Instructor

Aug 2024 - Present

Faculty Profile

FAST - National University of Computer and Emerging Sciences, CFD Campus

Responsibilities

- Conducted Labs for undergrad students in the Department of Computer Science
- Courses taught: Programming Fundamentals, Operating Systems, Computer Networks, IT in Business
- Member of departmental course folder review panel and committee for NCEAC

### •Graduate Assistant

Nov 2022 - June 2024

Responsibilities

University of Wah, Wah Cantt

- Conducted Labs for undergrad students at the Department of Computer Science
- Courses: Database Systems, Database Applications, Applications of ICT
- Assisted in Outcome-Based Education (OBE) curriculum development and materials preparation.
- Contributed to departmental administrative tasks and projects

### •Intern

July 2022 - Oct 2022

Learnings

Pakistan Ordnance Factories, Wah Cantt

- Gained experience with database management
- Learned basics of network and its implementation in an organization
- Delivered presentations on ongoing projects, effectively communicating technical concepts

## PUBLICATIONS

C=CONFERENCE, J=JOURNAL, S=IN SUBMISSION

- [C.1] Hassan Jari, **Hassan Ahmed**, Hareem Kibriya, Wazir Zada Khan, Ali Tahir. **An Ensemble Deep Learning Framework for Autonomous Vehicle Attack Detection**. In *Proceedings of the 2025 International Conference on Emerging Technologies in Electronics, Computing, and Communication (ICETECC)*, Jamshoro, Pakistan, 23–25 April 2025, IEEE, DOI: 10.1109/ICETECC65365.2025.11070228.

## CONFERENCES

R=REVIEWER, P=PRESENTER, A=ATTENDEE

- [R.1] **International Conference on IT and Industrial Technologies** at FAST-National University of Computer and Emerging Sciences, CFD Campus, Pakistan. Date: 10 - 12 Dec, 2024.
- [R.2] **International Conference on Artificial Intelligence and Green Computing** at Campus Mghilla, Beni Mellal, Morocco. Date: 14 - 16 May, 2025.
- [P.1] **4th International Conference on Smart Plant Protection** at MNS-University of Agriculture, Multan, Pakistan. Date: 30 - 31 Oct, 2024.
- [P.2] **2nd International Conference on Emerging Technologies in Electronics, Computing and Communication (ICETECC 2025)** at Mehran University of Engineering & Technology, Jamshoro, Sindh, Pakistan. Date: 23 - 25 April, 2025.
- [A.1] **8th Multi-Disciplinary Student Research International Conference** at University of Wah, Wah Cantt, Pakistan. Date: 06 - 07 Dec, 2023.

## TECHNICAL SKILLS

---

**Languages:** C++, Python, SQL

**Libraries:** NumPy, Pandas, Tensorflow, Keras, Scikit-learn, OpenCV, Hugging Face Transformers, LIME, SHAP

**ML Techniques:** Transfer Learning, Model Fine-tuning, Model Deployment

**Databases:** Relational Database (MySQL)

**Research:** LaTeX, Endnote, Edraw Max

**Tools:** Kaggle, Jupyter Notebook, MS Office, MS Access, MS Visio, CISCO Packet Tracer, Wireshark

**Operating Systems:** Windows, Linux

## SOFT SKILLS

---

**Communication:** Effective Verbal and Written Communication, Presentation Skills, Active Listening

**Teamwork:** Collaboration, Relationship Building, Networking

**Problem-Solving:** Critical Thinking, Creativity, Adaptability

**Leadership:** Decision Making, Delegation, Motivation, Team Management

**Time Management:** Prioritization, Scheduling, Goal Setting, Multitasking

## PROJECTS

---

### •DeepCAN: Intrusion Detection System for Controller Area Network

**Tools, Programming Languages & Libraries:** Kaggle, Python, Keras, TensorFlow, Pandas, NumPy, Scikit-learn, Matplotlib

- Developed DeepCAN, a deep learning-based Intrusion Detection System (IDS) for the Controller Area Network (CAN), to enhance the security of In-Vehicle Networks (IVNs) in Autonomous Vehicles (AVs)
- Implemented deep learning techniques for intrusion detection, achieving a classification accuracy of 94.52% and outperforming existing methods in terms of accuracy and F1-score.
- Created an advanced IDS framework that detects and classifies impersonation, fuzzy, and denial-of-service (DoS) attacks, ensuring improved security and reliability for AVs.
- Applied Explainable Artificial Intelligence (XAI) methods, such as LIME, to analyze detection results and provide interpretability in IDS decision-making.

### •AgriGuard

**Tools, Programming Languages & Libraries:** Kaggle, Python, NumPy, Pandas, TensorFlow, Scikit-learn, Matplotlib, OpenCV, Seaborn

- Developed a pest image classification system for agricultural pest detection, enabling early pest identification and intervention to prevent crop losses.
- Implemented Deep CNN for pest classification, achieving an accuracy of 90.00%, thus improving detection efficiency and reducing the need for chemical pesticides.
- Created a deep learning-based classification pipeline with data augmentation and transfer learning, ensuring improved model generalization across diverse pest images.
- Applied confusion matrix and classification reports to analyze model performance, identifying precision, recall, and F1-score for different pest categories to optimize the classification process.

### •Breast Cancer Prediction using Machine Learning

**Tools, Programming Languages & Libraries:** Python, Pandas, NumPy, Seaborn, Matplotlib, Scikit-Learn

- Developed a breast cancer prediction model using ML algorithms and achieved an accuracy of approximately 94.00 to 98.00%.
- Implemented data preprocessing and feature selection techniques to process thousands of patient records for improved model performance.
- Created correlation heatmaps and distribution plots to analyze key diagnostic features to enhance interpretability for clinicians.
- Applied a classification pipeline for easy integration with hospital decision-support systems, aiding in early detection of breast cancer.

## COURSES AND TRAININGS

---

–Problem-Based Learning in OBE	2024
FAST - National University of Computer and Emerging Sciences, CFD Campus	
–Two-Day Teacher Training Workshop	2024
FAST - National University of Computer and Emerging Sciences, CFD Campus	
–Machine Learning, AI & Data Science	2024
Governemnt of Punjab, Pakistan	
–Introduction to Generative AI	2024
Google Cloud	
–Introduction to Cybersecurity	2022
CISCO Networking Academy	
–Virtual Assistant	2022
DigiSkills.pk	
–Search Engine Optimization	2022
DigiSkills.pk	
–Data Analytics and Business Intelligence	2022
DigiSkills.pk	
–E-Commerce Management	2022
DigiSkills.pk	

## VOLUNTEERING & EXTRACURRICULAR ACTIVITIES

---

### –Blood Donation Volunteer

*Sep 2019 - June 2022*

Comsats University Islamabad, Wah Campus

#### *Activities*

- \* Organized and managed multiple blood donation camps in collaboration with the Pakistan Red Crescent Society
- \* Successfully motivated the students to take part, which led to the collection of more than 100 pints of blood per camp
- \* Provided support and assistance to donors throughout the donation process, ensuring a positive experience for all participants

### –Media Head

*Oct 2023 - May 2024*

Computing Society, UW

#### *Activities*

- \* Served as the Media Head, leading the documentation and coverage of various events and activities
- \* Managed a team of photographers and ensured comprehensive coverage of all events, including but not limited to academic seminars, cultural festivals, and community service initiatives
- \* Played a key role in promoting the visibility and positive image of the institution through compelling visual storytelling

### –Photographer

*Oct 2022 - May 2024*

Media & Mass Society, UW

#### *Activities*

- \* Ensured comprehensive coverage of all events, including but not limited to academic seminars, cultural festivals, and community service initiatives

## AWARDS & ACHIEVEMENTS

---

–**Outstanding Contribution Award from PM of Pakistan** All Pakistan Minorities Heritage Photo Contest

*18th April, 2023*

–**02 times Winner of Naat Competition** Inter-University Competition by Literary Society, UW

*Oct 22 - May 24*

–**Winner of Naat Competition** National competition arranged by YPDC, UOC.

*31st March, 2023*

–**Second Position in Naat Competition** National competition arranged by Pakistan National Arts Council.

*25th Oct, 2023*

–**03 times Winner of Naat Competition** Inter-University Competition at CUI, Wah Campus

*Sep 18 - Dec 19*

–**02 times Winner of Kalam e Iqbal Competition** Inter-University Competition at CUI, Wah Campus

*Sep 18 - Dec 19*

–**Winner of Naat Competition** National competition arranged by FGEI (C/G)

*28th Oct, 2013*

–**Winner of Milli Naghma Competition** National competition arranged by FGEI (C/G)

*11 Nov, 2013*

## HOBBIES & LEISURE ACTIVITIES

---

**Photography:** Passionate about visual storytelling through photography. My genres include landscape, street, and portrait photography. View my work at: [snappy\\_786](#)

**Traveling & Adventure:** Enjoy exploring new places and cultures, meeting new people from diverse backgrounds, and learning from their traditions and ways of life. These experiences enhance my creativity and communication skills.

**Singing:** Award-winning performer in national and inter-university Naat, National Song, and Kalam-e-Iqbal competitions.