



# Talha Saeed

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## ABOUT ME

Experienced Researcher and Academic with expertise in Explainable AI, Bayesian Optimization, Computer Vision, Deep Learning, and Software Engineering. I hold an MS degree from the University of Malaya, ranked 60th globally, where my research focused on Explainable AI, Bayesian Optimization, and Deep Learning for medical image classification, culminating in a publication in a top-tier journal.

As a Research Assistant at UET Taxila, I led projects in AI-driven malware detection, resulting in multiple IEEE conference publications. I also served as a Lecturer at the University of Wah, where I mentored and instructed students in AI, Computer Science, and Software Engineering.

Currently, I am a Lecturer in the Computer Science Department at HITEC University Taxila, where I am committed to delivering high-quality instruction and fostering research excellence. Additionally, I serve as a Focal Person at the Office of Research, Innovation, and Commercialization (ORIC), overseeing Memorandums of Understanding (MOUs) and facilitating industry-academia linkages by coordinating partnerships and collaborative initiatives.

## WORK EXPERIENCE

### Lecturer

**HITEC University Taxila** [ 10/2024 – Current ]

**City:** Taxila | **Country:** Pakistan | **Website:** <https://www.hitecuni.edu.pk/> | **Name of unit or department:** Department of Computer Science - **Business or sector:** Education

As a Lecturer, my responsibilities are to

- Serve as the Focal Person for the Office of Research, Innovation, and Commercialization (ORIC) in the Computer Science Department, facilitating research collaborations and funding opportunities.
- Organize Industry-Academia Linkage Trips to bridge the gap between theoretical knowledge and practical industry applications.
- Develop course materials, lesson plans, and instructional aids in alignment with Outcome-Based Education (OBE) guidelines.
- Deliver engaging and interactive lectures to enhance student comprehension and participation.
- Design and evaluate assignments, quizzes, and exams based on OBE principles to ensure effective learning outcomes.
- Provide constructive feedback and academic guidance to support student performance and development.
- Engage in research activities, contributing to the academic field and integrating research findings into teaching materials.
- Write grant proposals and secure funding to support research initiatives.
- Publish research findings in peer-reviewed journals and present at national and international conferences.
- Supervise Final Year Project (FYP) groups, providing mentorship and technical guidance throughout the project lifecycle.
- Serve as a member of the Final Year Project (FYP) Evaluation Committee, monitoring and assessing the progress of ongoing projects.
- Participate in curriculum development and the continuous improvement of academic programs to align with industry standards.

- Collaborate with faculty and industry experts to foster innovation and knowledge exchange.
- Mentor students in career development, research opportunities, and academic growth.

## Lecturer

**University of Wah, Pakistan** [ 10/2023 – 10/2024 ]

**City:** Wah Cantt | **Country:** Pakistan | **Website:** <http://uow.edu.pk/> | **Name of unit or department:** Department of Computer Science - **Business or sector:** Education

As a Lecturer, my responsibilities were to

- Prepare Outcome-Based Education (OBE) based Course Outlines aligned with Bloom's Taxonomy levels as a member of the Departmental Curriculum Review Committee (CRC).
- Arrange Industry-Academia linkage trips for students to bridge theoretical knowledge with practical experience.
- Develop course material, lesson plans, and instructional aids according to OBE guidelines.
- Deliver lectures clearly and engagingly to ensure student understanding and participation.
- Develop and grade assignments, quizzes, and exams according to OBE guidelines.
- Provide constructive feedback and guidance to students to improve their performance.
- Engage in research activities to contribute to the academic field and enhance teaching material.
- Write grant proposals and secure funding to support research projects.
- Publish research findings in peer-reviewed journals and present at conferences.
- Supervise Final Year Project (FYP) groups, providing guidance and support throughout the project lifecycle.
- Monitor and guide the progress of ongoing FYPs as a member of the Final Year Project (FYP) committee.
- Facilitate student employment opportunities and networking with industry professionals as a member and focal person for the Job Fair.

## Laboratory Demonstrator

**HITEC University Taxila** [ 02/2023 – 09/2023 ]

**City:** Taxila | **Country:** Pakistan | **Website:** <https://www.hitecuni.edu.pk/> | **Name of unit or department:** Department of Computer Science - **Business or sector:** Education

As a Lab Demonstrator in the Department of Computer Science, my primary role was to assist and support students during their practical laboratory sessions within an OBE-based system, ensuring they effectively applied theoretical knowledge to hands-on experiments. I facilitated the development of students' psychomotor skills by guiding them in using programming tools, computing technologies, and software applications, aligning with Outcome-Based Education (OBE) principles to enhance their practical competencies and problem-solving abilities.

## Research Assistant

**Deep Packet Inspection (DPI) Lab under National Centre for Cyber Security, UET Taxila Pakistan** [ 10/2020 – 02/2023 ]

**City:** Taxila | **Country:** Pakistan | **Website:** <https://www.uettaxila.edu.pk/> | **Name of unit or department:** Department of Telecommunication Engineering - **Business or sector:** Education

- Developed deep learning algorithms for intrusion detection in deep packet inspection (DPI) systems, enhancing network security.
- Assisted postgraduate students in designing and implementing deep learning methodologies for their thesis research, providing guidance on theoretical and practical aspects.
- Contributed to publications by aiding in the successful dissemination of research findings related to deep learning in cybersecurity.

## Internee

**Nokia** [ 09/2018 – 12/2018 ]

**City:** Islamabad | **Country:** Pakistan

## EDUCATION AND TRAINING

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### Master of Computer Science

*University of Malaya (QS World Ranking 60th)* [ 2023 ]

Address: 50603 Kuala Lumpur (Malaysia) | Website: <https://www.um.edu.my/> | Field(s) of study: AI | Final grade: Full Research mode | Thesis: ENSEMBLES OF DEEP LEARNING MODELS OPTIMISED USING THE BAYESIAN APPROACH TO CLASSIFY GASTRIC DISEASES

Contributed towards the research area of Explainable AI and Computer Vision for medical image analysis by publishing the research work in Web of Science Q1 Journal having impact factor 4.89 (JCR2019). The short summary of my research project is as follows.

"A Deep learning method comprising of three phases is proposed to classify life-threatening gastrointestinal diseases. At first, hyperparameter tuning is performed using Bayesian optimization for two state-of-the-art deep CNNs, and then Darknet53 and InceptionV3 features are extracted from these fine-tuned models. Secondly, XAI techniques are used to interpret which part of the images CNN takes for feature extraction. At last, the features are fused, and uncertainties are handled by selecting entropy-based features. The experimental results show that the proposed method outperforms existing methods."

### Bachelor of Science in Software Engineering

*COMSATS University Islamabad* [ 2018 ]

Address: 45550 Islamabad (Pakistan) | Website: <https://www.comsats.edu.pk/> | Thesis: Web-based E-hospital System

Developed a web-based E-hospital system, a secure and reliable communication platform designed to enhance hospital operations and patient-doctor interactions globally. This innovative web application features a robust database, enabling administrators to manage hospital activities remotely. The platform ensures that hospital-related information is transparent and accessible to relevant authorities and personnel. Key users of this system include doctors, patients, administrators, and other professionals within the hospital environment.

## PUBLICATIONS

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[2024]

**1. Saeed, T., Khan, M. A., Hamza, A., Shabaz, M., Khan, W. Z., Alhayan, F., Jamel, L., & Baili, J. (2024). Neuro-XAI: Explainable deep learning framework based on DeeplabV3+ and Bayesian optimization for segmentation and classification of brain tumor in MRI scans. *Journal of Neuroscience Methods*, 110247.**

[2024]

**2. Khan, A. M., Tariq, M. A., Rehman, S. K. U., Saeed, T., Alqahtani, F. K., & Sherif, M. (2024). BIM Integration with XAI Using LIME and MOO for Automated Green Building Energy Performance Analysis. *Energies*, 17(13), 3295.**

[2023]

**3. Arshad, S., Zanib, R., Akram, A., Haider, A., Saeed, T., & Raza, M. S. (2023, February). ML-IBotD: Machine Learning based Intelligent Botnet Detection. In *2023 3rd International Conference on Artificial Intelligence (ICAI)* (pp. 214-219). IEEE.**

[2023]

**4. Arshad, S., Zanib, R., Akram, A., & Saeed, T. (2023, January). A Short Review on Faster and More Reliable TCP Reassembly for High-Speed Networks in Deep Packet Inspection. In *2023 1st International Conference on Advanced Innovations in Smart Cities (ICAISC)* (pp. 1-6). IEEE.**

[2022]

**5. Saeed, T., Kiong Loo, C., & Safiruz Kassim, M. S. (2022). Ensembles of Deep Learning Framework for Stomach Abnormalities Classification. *Computers, Materials & Continua*, 70(3).**

[2021]

**6. Alam, M., Akram, A., Saeed, T., & Arshad, S. (2021, November). DeepMalware: A Deep Learning based Malware Images Classification. In 2021 International Conference on Cyber Warfare and Security (ICCWS) (pp. 93-99). IEEE.**

## **RESEARCH PROJECTS**

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**Classification of Gastric Abnormalitie susing Deep / Machine Learning**

**Deep Packet Inspection and intrusion detection using Deep / Machine Learning**

## **RESEARCH FUNDINGS**

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**Universiti Malaya Covid-19 Related Special Research Grant (UMCSRG) CSRG008-2020ST and Partnership Grant (RK012- 2019)**

Masters research was supported by the Universiti Malaya Impact-oriented Inter disciplinary Research Grant Programme (IIRG)-IIRG002C-19HWB, Universiti Malaya Covid-19 Related Special Research Grant (UMCSRG) CSRG008-2020ST and Partnership Grant (RK012- 2019) from University of Malaya

## AWARDS AND TRAININGS

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[ 2024 ]

**Promoting your research articles: Tools & services by IEEE**

[ 2024 ]

**Integrating IEEE eLearning Courses into your teaching: A dedicated session for lecturers by IEEE**

[ 2024 ]

**Three day training on "Advancing Teaching Excellence Strategies for Effective Higher Education Instruction and Professional Development" Organized by Punjab Higher Education Commission (2024)"**

[ 2024 ]

**Resource Person for the "Three Days UW Faculty Development Program" at the University of Wah**

[ 2023 ]

**Introduction to Python Scripting for DevOps by Coursera**

[ 2023 ]

**Navigating the pathways of publishing in High-quality journals by Using Science Direct by Elsevier**

[ 2022 ]

**Basic Image Classification with TensorFlow by Coursera**

[ 2022 ]

**Publishing with IEEE Open Access Journals by IEEE**

[ 2020 ]

**Improving Research Planning skills using Elsevier Tools- ScienceDirect & Scopus by Elsevier**

[ 2020 ]

**Deep Learning Onramp by MathWorks**

[ 2020 ]

**Agile Management And Self Organized Teams by Pakistan Engineering Council**

## TECHNICAL SKILLS

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### Computer programming

- Python/Keras/TensorFlow/Flask
- *MATLAB*
- C/C++
- Java
- Xamarin/ React Native/Flutter
- HTML/CSS/Java Script/PHP/Laravel
- SQL,Oracle,MYSQL
- Visual Studio
- Wireshark
- Prolog
- CF Writer
- Microsoft Office