Wajeeha Nasar

Mobile: +4745915284 **E-mail:** wajeehanasar09es27@gmail.com
LinkedIn: www.linkedin.com/in/wajeeha-nasar92

Key Qualifications

PhD in Computer Science, where research is titled 'Artificial Intelligence-Informed Decision Support for Search and Rescue'. Experience in software development, explainable AI, NLP, and data management. An experienced researcher and educator, with an emphasis on system design and development, has held roles as a lecturer in many courses and a researcher in multiple EU projects. Former electrical engineer experience added to interdisciplinary viewpoints and provided insightful industry knowledge. It demonstrated adaptability by switching between positions in industry and academia across different locations. I am open for relocation.

Education

06.2020–01.2024 **Doktorgrad, IKT: datateknologi (IT)** – NTNU i Ålesund

08.2017–06.2020 **Masters of Science in Simulation and Visualization, Department of ICT and Natural Science** – NTNU i Ålesund

03.2014–11.2016 **Masters of Science in Electrical Engineering, Wireless Communication** – Institute of Space Technology, Pakistan

08.2009–12.2013 **Bachelor i teknisk-naturvitenskapelige fag, annet** – Islamia University Bahawalpur

Work experience

08.2024 **Scientific Researcher**, NTNU i Ålesund

Working in an EU project where the focus is to develop a digital twin for smart city planning.

10.2023–02.2024 **University Lecturer**, NTNU i Ålesund

Taught a computer graphics course to MSc and BSc students at NTNU i Ålesund.
• Used Javascript and webGL.
• delivered lectures, assignments and examinations

https://www.ntnu.edu/studies/courses/IE500217#tab=omEmnet

01.2020–06.2020 **University Lecturer**, NTNU i Ålesund

Taught a course on "Electrical Power Systems" through lectures, laboratory work, and excursions. Academic content includes symmetric components, load flow, reactive power compensation, measurement technologies of a power system, and so on

01.2018–03.2018 **Teaching Assistant**, NTNU i Ålesund

Attached with the Dynamic Simulations of Control systems Labs and delivered lectures to students. Topics of lectures were:
• Introduction to MATLAB
• Conduct Fundament Control System Labs on Quanser Cube with MATLAB Such as Integration, Filtering, Stability Analysis, Bump Test, Modelling, First Principles Modeling, Second-Order Systems, PD Control, Lead Compensator

12.2016–05.2017 **Electrical Engineer, Intern**, Enmasse (Pvt.) Limited, Pakistan

I was attached to a consultancy company as an intern in the department of power distribution. My duties were:

Analyzing the weaknesses in the existing power system
Searching for the best practices and systems around the world to be implemented in the cities
proposing better and more advanced models of electrical power distribution in different cities of Pakistan.

Courses

01.2023 **Advanced courses in database engineering**

https://www.ntnu.no/studier/emner/DT8801/2021/1#tab=omEmnet

11.2022 **Visualize your Sciene**

Course content included, among others, Images in science, Art school for scientists, Colors in science, Typography, Layout, Image ethics, Data visualization, Scientific posters.

Publications

1. https://www.researchgate.net/profile/Wajeeha-Nasar
2. https://scholar.google.com/citations?hl=en&user=eZeCXskAAAAJ&view_op=list_works&sortby=pubdate

Projects

NorDark Digital Twin

Python, cloud platform, ML

• PI for the technological part of the project.

• Part of EU project.

• Technologies used: Python, Unity 3D, C#, cloud computing, and client-server based platforms.

Digital Twin for smart city planning.

Python, ML, and cloud platforms.

• Monitored and deployed a digital twin platform for smart city planning.

• Part of EU project

• **Technologies used:** Python, Unity 3D, C#, PostgreSQL, cloud computing, and client server based platforms.

AI-Informed Decision Support System for Search and Rescue.
NLP, AI, ML, SQL, NoSQL, and cloud computing.
• Designed and developed a DSS for search and rescue (SAR) experts.
• Part of AISAR project in Norway.
• **Technologies used**: Neo4j, Python, Jupyter Notebook, Visual Studio, Git, cloud computing, data management, and analysis.

IoT-based a Smart and Sustainable Waste Management System.
Python, ML, and Google Cloud Platform.
• Developed a smart and sustainable management system.
• Part of the U4SSC project.
• Targeted solid waste KPIs.
• Optimized routing planning.
• **Technologies used:** Real-time data processing and analysis, Machine Learning algorithms,
Spectrum Sensing for Wideband spectrum in Cognitive Radio Networks (CRNs).
MATLAB
• Proposed an efficient greedy algorithm for signal reconstruction in CRNs.
• Comparison with the existing orthogonal matching pursuit and block orthogonal matching pursuit algorithms.

Monitoring Security and Alarming for an Inventory, based on RFID and *Embedded System*
C/C++
• Presented a model that could provide security to an inventory through RFID technology, sensors, and microcontrollers.
• Technical details: Microcontrollers, C/C++, sensors, and RFID transceivers.