# Usama Bin Umar

## CONTACT

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## SKILLS

C++

Python

Deep Learning

Machine Learning

Operating Systems

Linux

IoT

Office 365

Documents

Arduino, ESP32 and Raspberry Pi

MATLAB

## PERSONAL SKILLS

Strategic Planning

Leadership Experience

Communication Skills (Inter-personal and Virtual)

Prioritized and Scheduled Time Management

Fluent language skills (English, Urdu and Hindko)

## PROFILE

Dedicated Data Scientist at Cee solutions and Instructor at FAST with excellent analytical and problem-solving skills. With over three years of experience at FAST University. Proficient in teaching a variety of computer science and engineering courses, including Machine Learning, Programming Fundamentals, OOP, Data Structures, Signals and Systems, Circuit Analysis, and IoT. Recently completed a master's degree in data science, with a strong focus on Machine Learning and Deep Learning.

## WORK EXPERIENCE

**Data Scientist – Cee Solutions**

08/2024 – Present | Karachi, Pakistan

- Developed and deployed SKU detection systems using computer vision techniques to enhance inventory tracking and operational efficiency.
- Designed and implemented chatbot solutions leveraging Retrieval-Augmented Generation (RAG) models for improved conversational AI capabilities.
- Expertly analyzed and managed complex datasets using SQL and Excel, providing data-driven insights for academic and project applications.
- Conducted end-to-end data analysis and model deployment, integrating SQL, Python, and cloud-based tools for effective project delivery.

**Instructor – FAST NUCES**

08/2021 – Present | Karachi, Pakistan

- Taught Machine Learning, utilizing Python to develop and deploy models, and integrating practical exercises to enhance student understanding of algorithms and data processing.
- Taught courses such as Programming Fundamentals, OOP, Data Structures, Signals and Systems, Circuit Analysis, IoT, and Operating Systems.
- Developed and delivered course materials, including lectures and assignments, with a strong focus on data analysis, machine learning, and practical applications.
- Programmed ESP32 Arduino for IoT projects, integrating data collection, cloud connectivity.

**Faculty Head – DATA SCIENCE SOCIETY**

08/2023 - 6/2024

- Organized various events, including DATACON, the largest event of the society.
- Conducted seminars and invited industry professionals to speak.
- Coordinated with students and faculty to ensure successful event execution.
- Conducted workshops to enhance students' practical knowledge and skills in data science.

# EDUCATION

**Master of Science in Data Science (2022 – 2024) (CGPA-3.53)**
FAST -National University of Computer Emerging Sciences (NUCES), Karachi.

**Bachelor of Science in Electrical Engineering (2017 – 2021) (CGPA-3.00)**
Stream (Computer Engineering)
FAST -National University of Computer Emerging Sciences (NUCES), Karachi.

**FSC and Matriculation (2012-2016)**
Army Public College, PMA Kakul, Abbottabad

## PROJECTS

- **Modulation Classification for 6G network using Generative AI | [Thesis]** **Aug 2023 – Jul 2024**

Investigated the challenge of resource allocation in 6G networks with a focus on the classification of modulated signals using advanced deep learning techniques. This research incorporated deep neural networks, including GRU, LSTM, CNN, hybrid models, and transformers, to develop an automatic modulation classification scheme for various modulation types such as BPSK, QPSK, PAM4, and QAM. Comprehensive analysis showed that the hybrid model with LSTM achieved the highest accuracy of 98% at an SNR of 30dB, highlighting the importance of AI in optimizing network efficiency. The study emphasized the transformative potential of integrating AI-driven solutions into 6G architecture to enhance signal classification, resource allocation, and overall network performance under varying noise conditions.

- **Emotion Based Music player using AI | [fyp]**

Developed an advanced emotion-based music player application that automatically generates playlists based on the user's detected emotions using facial recognition and emotion detection algorithms. The application, built with OpenCV, Python, TensorFlow, and Dlib, includes features such as custom playlist creation and a therapy mode for providing calming music based on the user's emotional state. This project involved extensive model training with FER+ and AffectNet datasets, achieving high accuracy in emotion detection and user identification.

- **Bank Management System | Data Structures**

Bank Management System is based on a concept of recording customer's account details. Here the user can perform all the tasks like creating an account, deposit amount, withdraw amount, check balance, view all account holder detail, close an account and modify an account.

- **IOT Based Air Quality Monitoring System Using ESP32 | Internet of Things**

Designed and implemented an air monitoring system using multiple ESP32 devices connected to air monitoring sensors. The system collects real-time air quality data and sends it to the cloud for analysis and monitoring. This project involved setting up sensors, programming ESP32 devices, and utilizing cloud services to store and visualize the data, providing an efficient solution for environmental monitoring and data-driven decision-making.

| EXTRA CURRICULAR ACTIVITIES | MERIT CERTIFICATES/SHEILDS |
|---|---|
| • **Head of Participation Relation**, IEEE, 2021, FAST NUCES.<br>• **Head** of Different Competition ,PROCOM,FAST NUCES.<br>• Participated in Arduino Workshop, FAST NUCES, 2019.<br>• Member of **Event Management**, Sportics-2019. | • Sheilds for **Judge** in Robotic Competition.<br>• Sheild for Co-Faculty Head in Data Science society.<br>• Certificate for Best **Teacher Award** FAST NUCES.<br>• Certificate for **Head Participation Relation** in IEEE.<br>• Certificate For participate in Soldering Competition. |