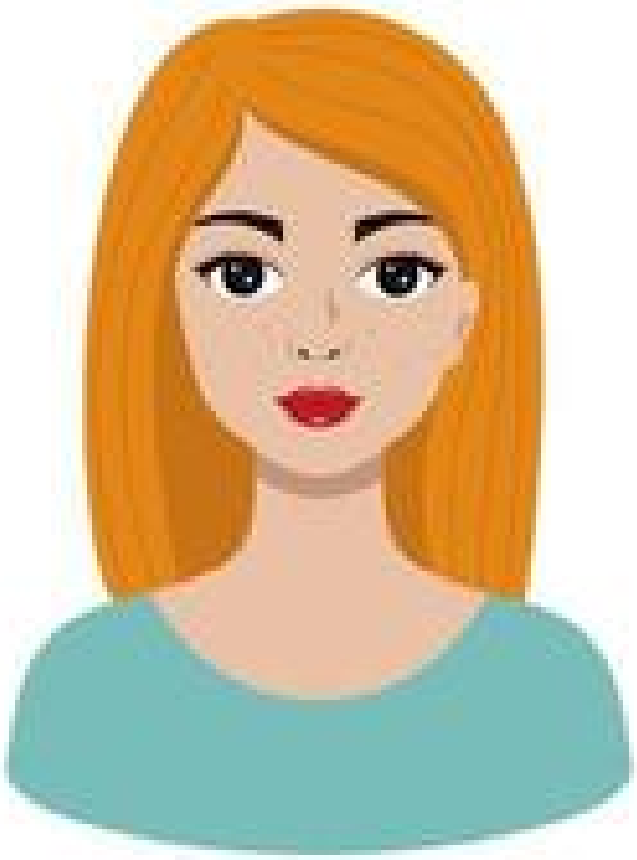

Eiza Batool

Award-Winning AI Cyber Security Specialist

About Me

I am an award-winning AI and cybersecurity specialist with a Master's in Data Science (Silver Medalist) and a Bachelor's in Bioinformatics. My expertise includes machine learning, NLP, and deep learning, with contributions to audio forensics, video analysis tools, and a secure data shredding application. Currently, I work as a Senior Developer at the National Center for Cyber Security, where I also mentor students and interns. My academic honors include the Magna Cum Laude Honor and

a Silver Medal, along with several certifications in data science and academic excellence.

Name: Eiza Batool

Experience: 3 Years

Phone: +92 320 0479687

Email: eizachaudhary416@gmail.com

Skills

→ Technical Skills

- **Programming Languages and Libraries:**
  - Python: Pandas, NumPy, Scikit-learn, TensorFlow, Keras, Fasttext
  - R
  - HTML/CSS
  - JavaScript
- **Frameworks and Tools:**
  - Bootstrap
  - Electron.js
  - Flask
  - Node.js
  - React.js
  - Tkinter
- **Database Management:**
  - SQL
  - SQLite
- **Machine Learning:**
  - Natural Language Processing (NLP)
  - Deep Learning
  - Web Scraping
  - Classification and Regression
- **Miscellaneous:**
  - LATEX (Overleaf)

→ Soft Skills

- Time Management
- Teamwork
- Problem-Solving
- Documentation
- Engaging Presentation
- Video Editing
- Leadership
- Communication
- Logical Thinking
- Report Writing

Work Experience

Research Associate / Senior Developer

National Center of Cyber Security and Forensics (NCF), NASTP | April 2023 - Continue

- I have successfully completed tasks related to audio forensic applications and social media analysis (this includes conducting in-depth analy- sis of Twitter datasets using Bag-of-Words (BOW) representation and automatic annotation, manually annotating these datasets, and training models with various algorithms: Logistic Regression (Count Vectorizer and TF-IDF), Decision Tree (Count Vectorizer and TF-IDF), Random Forest (Count Vectorizer and TF-IDF), and MLP (Count Vectorizer and TF-IDF)).
- I contributed to the research paper titled ”Advancements in Audio Forensics: A Comprehensive Survey of Techniques and Tools.”
- I have completed tasks related to YouTube video parsing.
- In the mobile application domain, I have utilized ADB commands to extract media files and metadata from both rooted and unrooted devices. Additionally, I implemented

real-time monitoring and analysis, attempted to root Android devices for deeper data extraction, and created ADB and raw images of mobile devices. Furthermore, I have developed the frontend dashboards for mobile applications.

- I've offered guidance and mentorship to numerous students and interns, fostering their growth and development.
- In my current work, I'm focusing extensively on text classification using Twitter datasets. This involves preprocessing tweets to extract key fea- tures and leveraging TF-IDF vectorization to transform text into numerical representations suitable for logistic regression modeling. Additionally, I'm developing an API to deploy our trained model, enabling seamless interaction for real-time classification of user inputs. Visualizing model outputs through metrics and plots is integral to evaluating performance and understanding classification outcomes effectively.

Junior Developer

National Center of Cyber Security and Forensics (NCF), Air University | Oct 2021 - April 2023

I previously worked as a Research Assistant in the Computer Forensics team at a company responsible for undertaking fully funded projects by the Higher Education Commission (HEC) and Pakistan Airforce. My primary responsibilities involved developing Artificial Intelligence and Computer Vision-based projects. Below are some of the key projects I worked on:

- Developed an application aimed at securely shredding files, folders, and disk or drives to prevent any possibility of data recovery. The appli- cation integrates several advanced shredding algorithms to ensure that data is irreversibly destroyed. It also includes comprehensive logging features to keep track of all shredding activities effectively. Furthermore, the application offers a flexible filter functionality, enabling users to selectively shred specific types of files or directories based on their preferences and criteria. This combination of strong shredding methods, detailed logging, and customizable filtering enhances overall

data security by permanently eliminating sensitive information from storage me- dia.

- Developed a video analysis tool that provides a structured way to analyze and manage videos, software accepts video files, recognizes individ- uals, and generates a list of people who appear in the video at various points based on defined parameters.
- Managed and created various modules and application documentations for both codes and requirements gathering.
- Provided training and mentorship to various students and internees.

→ Research Assistant (RA)

Comsats University | June 2019 - Jan 2020

Project: "Developing a Diagnostic Strategy for Breast Cancer through Applying Artificial Neural Networks, K – Nearest Neighbors and Hidden Markov Models, Support Vector Machine (SVM) and Bayesian approaches including Naive Bayes, Random Forest and CART".

→ Freelance Python Developer

Fiver, Upwork | Aug 2020

- Communicated with clients to deliver quality projects and followed up with them.
- EDA, Gathering hidden insights from the data for a specific category of products.
- Machine Learning, Artificial Intelligence Projects, Deep Learning, NLP Projects.

Projects

Document Visual Question Answering (VQA)

Institution: Bahria University, Islamabad

Type: MS Final Year Project

My master's project on Visual Question Answering (VQA) in document images combined computer vision and natural language processing (NLP) by leveraging both visual and textual information. Utilizing the DocVQA dataset, which includes over 50,000 questions and 12,000+ document images, I developed a system that takes a question, OCR-extracted text, and an image as inputs. The model used pre-trained Inception v3 for visual representation and a Gated Recurrent Unit (GRU) for handling textual data. By implementing deep learning techniques and using evaluation metrics like the Average Normalized Levenshtein Similarity (ANLS) score, the integration of OCR and attention models significantly improved the system's performance.

Neural Architecture for Semantic Image Segmentation

Institution: Bahria University, Islamabad

Type: Research Project

This research provided an overview of neural architecture search techniques for semantic image segmentation, emphasizing automated meth- ods that outperform human-designed models. The study analyzed a range of neural architectures, assessing their effectiveness in diverse image segmentation tasks.

Diagnostic Strategy for Breast Cancer

Institution: Comsats University, Islamabad

Type: BS Final Year Project

I devised a robust diagnostic strategy for breast cancer using Artificial Neural Networks, K-Nearest Neighbors, and Hidden Markov Models. The focus was on identifying specific genetic markers that differentiate ER+ from ER- breast cancer subtypes, aiming to refine treatment approaches. This integrated approach

leveraged machine learning to analyze gene expression data comprehensively, facilitating more precise patient strat- ification and personalized therapeutic interventions.

House Price Prediction & Sentiment Analysis Projects

Institution: Numl University, Islamabad

Type: Artificial Intelligence Project

Completed various machine learning projects including house price prediction, sentiment analysis of movie reviews, and hotel reviews.

Honors and Awards

Silver Medal

Institution: Bahria University

Date: 2024

Description: Awarded the silver medal in recognition of exceptional performance and dedication in the MS Data Science program.

Magna Cum Laude Honor

Institution: Bahria University

Date: 2023

Description: Earned magna cum laude honor, reflecting high academic achievements and commitment to excellence in studies.

Certification

Certificate of Academic Excellence
Bahria University | 2024

This certificate is awarded for outstanding academic achievement in the Master's program, along with winning a silver medal.

Certificate of Academic Honor
Bahria University | 2023

I earned a Certificate of Academic Honor in recognition of achieving sustained academic excellence, leading to a CGPA of 3.80 in the Master of Science in Data Science. I was conferred this certificate with the distinction of Magna Cum Laude.

Artificial Intelligence (Robotics)
Prime Minister's Kamyab Jawan Program, NAVTTC | Sept 2020 – Mar 2021

I have achieved a certificate in Artificial Intelligence after completing a 6-month diploma from NUML University.

Python 101 for Data Science
IBM Developer Skills Network | Mar 2021

Certificate Link

Introduction to Data Science
IBM Developer Skills Network | Mar 2021

Certificate Link

Introduction to Python
DataCamp | Aug 2021

Certificate Link

Foundations: Data, Data, Everywhere
Coursera | 2022

Certificate Link

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