



# HAFIZA HAJRAH REHMAN

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**Github:** <https://github.com/hajraRehman>

**Portfolio:** <https://hajrarehman.github.io/>

Master's student in Data Science and Artificial Intelligence at Saarland University with hands-on expertise in end-to-end data pipelines, statistical analysis, and predictive modeling across healthcare, and computer vision domains. Proven ability to transform complex, high-dimensional datasets into actionable insights using Python, SQL, Pandas, Scikit-learn, and XGBoost. Skilled in data preprocessing, feature engineering, SMOTE for imbalance, and model evaluation. Applied parameter-efficient fine-tuning (LoRA, iA3) and influence-based data selection to optimize chemical LLMs, improving  $R^2$  by 6%. Strong foundation in AWS, Tableau, RapidMiner, and PyTorch with a focus on building trustworthy, interpretable, and production-ready data solutions.

## WORK EXPERIENCE

### Zeeoutsourcing UK – Remote

#### ML/Data Analyst

Mar 2023 – Feb 2024

- Led development of ML models for network security and IoT systems
- Collaborated on AI system optimization and deployment
- Delivered insights that supported strategic decision-making

#### Intern AI Engineering

Nov 2022 – Feb 2023

- Assisted in developing ML models for real-time applications
- Conducted preprocessing, feature engineering, and model evaluation

## EDUCATION

### Masters in Data Science and Artificial Intelligence

Mar 2024 – July 2026(expected)

Saarland University, Saarbrücken, Germany.

### Bachelors of Science in Computer Science (BSCS)

Dec 2019 – July 2023

University of Central Punjab, Lahore, Pakistan.

**Final Year Project:** A Deep Learning Model for Pedestrian Detection with Danger Estimation (Third Position in FYP Competition)

### Intermediate in Computer Sciences

Oct 2017 – May 2019

Punjab Group of Colleges, Lahore, Pakistan.

## CERTIFICATIONS

### Artificial Intelligence Course (SIC COHORT-II) - 2022

Samsung Innovation Campus

### AWS Academy Machine Learning Foundations

AWS Academy Graduate

### AWS Data Engineering

AWS Academy Graduate

## TECHNICAL SKILLS

- **Programming Languages:** Python, SQL, MATLAB, C++, C# , JavaScript, R, HTML/CSS
- **ML/DL:** PyTorch, Scikit-learn, XGBoost, ResNet, LoRA, iA3, SMOTE, Grad-CAM, LIME, Moco, SimCLR
- **NLP & GenAI:** Hugging Face, Transformers, Masked LM, Fine-tuning LLMs, Prompt Engineering
- **Data Analysis:** Pandas, EDA, Feature Engineering, Statistical Analysis, Matplotlib, Seaborn, Tableau
- **Cloud & DevOps:** AWS (SageMaker, S3, EC2), Git hub , Docker, Jupyter, Google Colab
- **Tools:** RapidMiner, Weka, OpenCV, Scikit-learn Pipelines
- **Domains:** Data Analysis, Gen AI, Computer Vision , NLP, Autonomous Driving, Trustworthy ML
- **Frameworks:** React.js, Django

## ACHIEVEMENTS & LEADERSHIP

- **President Pakistan Student Association Saarland (current)**
- Final Year Project - **3rd Place in University Competition** (2023)
- **Director Linguistics UCP** Literary society (2021 - 2023)
- **Director Writer's group UCP** Engineering society (2021 - 2023)
- Represented University in **FICS NUST** (2023) <https://fics.nust.edu.pk/idea/idea.php?idea=1532>
- Represented University in **Public Speaking & Debates** (2019 - 2023)
- Volunteer work **AI-Khidmat foundation** (plantation drive 2023, Ration Drive 2023)
- Management Head **TAAKRA (2023) - Pakistan's Biggest Multi-Category Competition**