RUQQIYA ASAD

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Professional Summary

Dedicated and qualified Lecturer in Computer Science and Software Engineering with a Master's degree in Data Science. Skilled in teaching and mentoring students in subjects such as Database Systems, Machine Learning, and Data Analytics. Experienced in curriculum design, lab instruction, final year project supervision, and active participation in academic committees. Committed to fostering an engaging learning environment and promoting research oriented education.

Education

Master's in Data Science **11/2020 – 09/2022**
NED University of Engineering and Technology
Karachi, Pakistan
CGPA: 3.70

Bachelor in Computer and Information System Engineering **12/2014 – 10/2018**
NED University of Engineering and Technology
Karachi, Pakistan
CGPA: 3.554

Professional Experience

Lecturer **29/2025 - Present**
NED University of Engineering and Technology (Karachi, Pakistan)

- Delivered courses in Computer Vision and Data Structures, emphasizing algorithmic thinking, image processing, and problem-solving techniques.
- Designed and supervised lab activities and mini-projects integrating OpenCV, data structures, and real-world computing applications.
- Served as the Final Year Project (FYP) Coordinator, mentoring students on research design, technical implementation, and project documentation.
- Managed the departmental website, ensuring timely content updates, usability improvements, and digital visibility.

Lecturer **03/2023 - 02/2025**
Usman Institute of Engineering and Technology (Karachi, Pakistan)

- Delivered courses in Database Systems, with a focus on SQL, ER modeling, and query optimization.
- Designed and evaluated hands-on assignments simulating real-world database scenarios.
- Mentored students on final-year projects involving data analysis and automation.
- Conducted sessions on data ethics, data storytelling, and Power BI basics to prepare students for industry tools

Junior Lecturer **03/2021 - 02/2023**
Sir Syed university of Engineering and Technology (Karachi, Pakistan)

- Taught core subjects in Software Engineering and Data Systems, aligning with industry trends.
- Participated in academic quality assurance and curriculum updates focused on emerging data technologies.
- Facilitated data related workshops and encouraged use of Python, Excel, and data visualization tools in student projects.

Skills

Data Analytics & Business Intelligence

- Power BI: Data modeling, DAX, KPI development, interactive dashboards
- Microsoft Excel: Advanced formulas, Pivot Tables, Lookup functions, Charts
- Tableau: Basic dashboard creation and data storytelling

- Jupyter Notebook: For data exploration and prototyping

Programming & Query Languages

- SQL: Data extraction, joins, subqueries, CTEs, window functions
- Python: Data analysis using Pandas, NumPy, scikit-learn, Matplotlib, Seaborn

Data Science & Machine Learning

- Data Cleaning & Preprocessing
- Exploratory Data Analysis (EDA)
- Predictive Modeling (SVM, Decision Trees)
- Model Evaluation & Tuning

Core Competencies

- Critical Thinking & Problem Solving
- Presentation & Data Storytelling
- Teaching & Technical Mentoring
- Research & Documentation

Projects

Crime Data Analysis & Prediction using Machine Learning Approach (MS Thesis)

Conducted a research-based project on Toronto's crime data using 240K+ records from 2014–2020.

- Applied machine learning algorithms (Decision Tree, KNN, Naive Bayes, and Random Forest) for predicting major crime indicators such as Assault, Robbery, Auto Theft.
- Tackled data imbalance using SMOTE and improved model performance with PCA (Principal Component Analysis).
- Achieved highest F1-score (69%) using Decision Tree classifier on imbalanced multi-class problem.
- Validated predictions using criminological theories (e.g. rational choice, social disorganization). **Tools**: Python, scikit-learn, Pandas, Matplotlib, Seaborn

NED Admission Chatbot for admission Related Queries using Prescriptive Analysis

NED University Real Admission Data (20,000+ queries)

- Designed an AI-powered chatbot using SVM to classify and respond to admission queries across 87 categories.
- Applied prescriptive analytics to generate real-time automated answers, reducing manual workload.
- Achieved up to 99% classification accuracy using Radial Basis Function kernel in R.
- Developed using R, JavaScript, AJAX (frontend) and MySQL (backend); deployed on NED admission portal. **Tools:** R, SVM, Excel, JavaScript, AJAX, MySQL
  Publication: *International journal of computer science and network security · May 1, 2019*

HR Analytics Dashboard using Power BI

- Designed an interactive dashboard to analyze employee attrition and department-wise turnover.
- Cleaned and transformed HR data using Power Query, implemented DAX measures for KPIs.
- Visualized trends to identify high-risk departments and potential reasons for attrition.
  Tools: Power BI, Excel, DAX

Inventory Management Dashboard using Power BI

- Developed a dashboard to monitor inventory levels, stock movement, and product performance.
- Used calculated columns and measures to track stock-in/stock-out and reorder alerts.
- Delivered data-driven recommendations to minimize stock outs and improve supply efficiency.
  Tools: Power BI, Excel