Zain R Hamid

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AI and FinTech technologist with 5+ years of experience in data science, backend engineering, and SaaS product architecture. Proven track record in automation, financial analytics, and scalable system design. Currently leading R&D at CapiPlan while pursuing long-term research interests in Artificial Intelligence and intelligent automation systems.

EDUCATION

Bahria University   **Islamabad, PK**
Masters of Science in Data Sciences,   *Mar 2021 - Mar 2023*
CGPA: 2.9/4.0 (70.22%)

Pir Mehr Ali Shah Arid Agriculture University - PMAS AAUR   **Rawalpindi, PK**
(BIMS)   *Aug 2018 - Aug 2020*
Master of Computer Science ,
CGPA: 3.36/4.0 (71.38%)

PROFESSIONAL EXPERIENCE

CapiPlan,   **Dubai**, UAE
Research & Development Manager   *Dec 2023–Present*

Driving technology vision and product innovation for a multi-module FinTech SaaS ecosystem serving accounting, payroll, HR, POS, and analytics solutions.

- Architect enterprise-scale backend systems and financial data infrastructures using Python, Flask, FastAPI, and modern API frameworks.
- Lead R&D strategy to evaluate and integrate emerging technologies including AI, data automation, and intelligent reporting engines.
- Direct cross-functional development efforts across backend, database, and analytics domains.
- Design scalable multi-tenant architectures and performance-optimized reporting pipelines.
- Spearhead AI-assisted financial analytics and automation initiatives to enhance decision intelligence.
- Align product innovation with business growth, market needs, and long-term platform scalability.

PayActiv   **Islamabad, PK**
Senior Data Analyst   *Jan 2022–Aug 2023*

Contributed to large-scale financial data analytics and automation initiatives within a global financial-wellness organization.

- Developed analytical models and automated data workflows to support financial decision-making.
- Collaborated with cross-functional teams to optimize reporting pipelines and business intelligence dashboards.
- Strengthened expertise in financial systems, data modeling, and enterprise-grade analytics.

In addition, I have achieved the following:

- Automated 330 tasks out of 444, increasing teamwork automation from 30% to 75% in a year, resulting in significant time and resource savings.

- Led successful Salesforce CRM integration, automating reporting processes and improving data accuracy, efficiency, and accessibility.
- Streamlined workflows, optimizing team productivity, reducing redundancies, and ensuring timely project completion resulted in the revenue generation of $21.2M USD and achieved cost savings of $37.5M USD in 2022.

AI Enabling Technologies Research Center, CoE-AI, **Islamabad, PK**
MS Researcher *April 2022–April 2023*

Conducted advanced research in AI-driven healthcare analytics, focusing on fraud detection and predictive modeling using data mining and unsupervised learning techniques.

- Designed and implemented machine-learning pipelines for anomaly detection in healthcare insurance claims.
- Collaborated with academic mentors and cross-disciplinary teams to translate research insights into practical AI solutions.
- Strengthened expertise in statistical modeling, data preprocessing, and intelligent system design.
- Contributed to research publications and analytical frameworks targeting real-world healthcare optimization challenges.

PayActiv **Islamabad, PK**
Technical Support Specialist *Jan 2020–Feb 2021*

Done data monitoring and process automation initiatives to improve operational efficiency and reduce manual overhead across enterprise workflows.

- Designed automated data validation and reporting systems to ensure accuracy and consistency.
- Implemented automation scripts that enhanced productivity and minimized repetitive operational tasks.
- Collaborated with technical teams to streamline cross-departmental data flows.

COURSES & CERTIFICATIONS

- **Deep Learning Specialization**
  Neural Networks and Deep Learning
  Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization
  Structuring Machine Learning Projects
  Convolutional Neural Networks
  Sequence Models

- **TensorFlow Developer**
  Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
  Convolutional Neural Networks in TensorFlow
  Natural Language Processing in TensorFlow
  Sequences, Time Series and Prediction

- Big Data Technologies - Metis International Limited
- SQL For Data Science
- Big Data Foundations - Level 1 - IBM

Publications

- Healthcare Insurance Fraud Detection Through Data Mining Techniques

Projects

CapiPlan Books – Accounting & Financial SaaS Platform
(Python, Flask, FastAPI, MySQL, Multi-Tenant Architecture, Automation, Financial Reporting, APIs)
CapiPlan Books is a scalable accounting and bookkeeping SaaS platform designed for SMEs and enterprises. The platform integrates financial reporting, invoicing, taxation workflows, and automation pipelines into a unified system.
- Architected backend APIs and financial data structures supporting multi-tenant environments.
- Designed performance-optimized reporting pipelines for balance sheets, profit & loss, and analytics dashboards.
- Implemented automation workflows and third-party integrations for enhanced efficiency.
- Contributed to product strategy, scalability planning, and AI-assisted financial analytics features.

Healthcare Insurance Fraud Detection Through Data Mining Techniques
(Data Mining, Python, Data Preprocessing, Unsupervised Learning, Anomalies Detection)
- The goal of this research project was to detect healthcare insurance fraud through the use of data mining techniques. In order to make the data more understandable for the machine, we have performed various preprocessing techniques on the unsupervised data.
- We applied different data mining methods to identify anomalies and potentially fraudulent activity in the healthcare insurance sector. Healthcare insurance fraud is a significant issue that has harmful consequences for both individuals and the healthcare industry.
- By using data mining techniques to detect fraudulent activity, we can effectively prevent fraud and protect the healthcare industry.

Teamwork Automation Enhancement
(Python, Pandas, Selenium, Data Extraction & Digestion)
In this groundbreaking project, I successfully automated a remarkable 330 out of 444 tasks, revolutionizing teamwork automation within the organization. Leveraging the power of Python, Pandas, and Selenium, I spearheaded a transformation that catapulted the team's automation capabilities from a mere 30% to an impressive 75% in just a single year.

Crime Analytics
(PowerBI, Hadoop, Data Preprocessing)
- This final year project involves the use of big data techniques to handle and analyze the Chicago Crime Dataset. The Hadoop framework was implemented to process and store the data, and PowerBI was used for interactive dashboards.
- The project has the potential to monitor crimes and assist law enforcement agencies in creating policies. It can help to make a significant impact in terms of crime prevention and policy making in the field of law enforcement.

Image Segmentation (PyTorch)
In this project, I worked with an image-mask dataset for segmentation. To handle the dataset, I created a custom dataset class using PyTorch that can load and preprocess the image and its corresponding mask.

Lungs Cancer Detection using CNN Deep Model (Tensorflow)
This is a Python project for lung cancer detection using a Convolutional Neural Network (CNN) deep model. The project consists of four main parts: building a data pipeline, preprocessing data, building the deep neural network, and evaluating performance.

Cancer Detection using Machine Learning
This project focuses on detecting breast cancer using various machine learning algorithms, namely Logistic Regression, Decision Tree, and Random Forest. The implementation utilizes popular Python libraries such as scikit-learn (SKLearn), pandas, numpy, and seaborn.

ADDITIONAL SKILLS

- Skills: Deep Learning, Computer Vision, Machine Learning, Unsupervised Learning
- Tools: Power BI, Data Studio
- Languages: Python, C#
- Proficient in MS 365 (Word, Excel, PowerPoint) Slack, Jira, Salesforce
- Fluent in English and Urdu