

Areeba Rauf

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EDUCATION

UNIVERSITY OF HILDESHEIM MSC DATA SCIENCE

August 2024 | Hildesheim, Germany

NED UNIVERSITY OF ENGINEERING AND TECHNOLOGY

BENG ELECTRICAL ENGINEERING
Jan 2019 | Karachi, Pakistan

ACADEMIC PROJECTS

Machine Unlearning with Gradient Manipulation - (Jul-2024)

Developed a method to tackle the challenge of machine unlearning, which involves removing information about the "forget" data from a learned model without altering the knowledge retained from the remaining dataset. The adopted projected-gradient-based learning method achieves this more efficiently than the naive retraining approach.

Transformers for Time Series Segmentation - (Dec-2023)

Developed Transformer U-Time, a deep learning model combining U-Time architecture with transformer blocks, to automate sleep staging from polysomnography (PSG) data. This model effectively learns temporal patterns in sleep data, outperforming state-of-the-art baselines on the DCSM dataset.

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

Python • TypeScript • JavaScript • C# • Java • C++ • HTML

FRAMEWORKS

Keras • PyTorch • TensorFlow • Express • Django • Spring Boot • .NET • NodeJS • ts.ED

DATABASES

TimescaleDB • DynamoDB • MongoDB • MSSQL • MySQL • PostgreSQL

TOOLS

AWS Glue • SageMaker • Redshift • PowerBI • Docker • JIRA • Postman • Tableau

WORK EXPERIENCE

E.ON DIGITAL TECHNOLOGY | SOFTWARE/DATA ENGINEER

Nov 2022 – Oct 2024 | Germany

- Designed and developed RESTful APIs using AWS API Gateway and Lambda
- Designed and developed serverless applications using AWS services such as Lambda and Step Functions.
- Implemented and maintained scalable data lake solutions using Amazon Lake Formation, incorporating Apache Spark for distributed data processing, ensuring high performance with large-scale datasets.
- Automated infrastructure deployment with AWS CloudFormation templates and integrated Airflow to orchestrate complex data pipelines, improving automation and operational efficiency.
- Created and deployed serverless functions with AWS Lambda to handle data transformation and integration tasks.
- Onboarded multiple vendors to the data lake, ensuring seamless data integration and compliance with data governance policies.
- Worked on key rotation logic for IAM users using AWS SES service.
- Architected and implemented a scalable data processing pipeline using AWS Glue, reducing data processing time by 30% and enabling real-time analytics.
- Created and maintained Dashboards on PowerBI using Datamarts
- Generated data profiles using **ydata** and integrated the profiles with **Great Expectations** for data quality analysis.
- Developed a robust pipeline using Python and CMake to automate build processes and manage dependencies.
- Integrated the pipeline with GitLab CI/CD to enable continuous integration and delivery, ensuring rapid and reliable deployment of updates.
- Demonstrated expertise in classifying and implementing various cloud strategies, including IaaS, PaaS, and SaaS.
- Applied deep understanding of IaC technologies to automate cloud infrastructure provisioning and management using tools such as Terraform.
- Learned and worked on writing AWS lambdas and cloud formation templates for GridX integration in Typescript using TS.ed framework
- Wrote unittests using mocha and jest for E.ON Home Backend API stack

BANK ALFALAH LIMITED | SOFTWARE DEVELOPER

Apr 2019 – Apr 2022 | Pakistan

- Developed Pensioner wallet solution through Rest APIs on Java Spring Boot integrated with Oracle databases and Web Application development on .NET Framework using MVC and entity framework.
- Developed card payment application from ISO 8583 card adopter on JAVA Spring classic Framework integrated with IBM Db2 financial database.
- Coded SQL queries and tested them on financial tables for quarterly financial evaluations and State Bank bulk reporting.
- Developed Call-Centre solution with Customized Roles as Web Application using .NET MVC Framework and Developed services on Dapper with .NET Core framework.
- Revamped MIS and Report Scheduling tool using Quartz.NET library on C# increasing system capability and performance by 60% and overall business profitability by 10%
- Built Desktop application for branches kiosk on .NET WPF framework in C#