

# Sami Ul Haq

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## ● WORK EXPERIENCE

23/11/2022 – CURRENT Lahore, Pakistan

### SOFTWARE ENGINEER - AI I2C

- A payment processor and credit card issuer that deliver innovation at scale through our global payment processing platform.
- Analyzed large datasets using advanced analytics tools, delivering valuable insights for positive business outcomes.
- Developed statistical models based on historical data to improve fraud capturing efficiency and reduce losses.
- Implemented Maven in Java projects, streamlining team and product setup processes, improving code quality, and reducing deployment times by 15%.
- Developed RESTful and BatchController APIs for deploying machine learning models to predict fraud in financial transactions.
- Handled API requests, extracting data, pre-processing, and passing it through models for fraud predictions, and deployed APIs to production environments for real-time predictions.
- Implemented authentication, authorization, encryption, and input validation for enhanced security.
- Provided analysis and solutions for critical production issues on various applications.
- Tested applications and features developed by other developers, analyzed client requirements and system specifications to prepare test scenarios and document test cases. Conducted testing on QA and staging environments and reported issues and clearances.
- Provided mentorship to junior team members, helping them acclimate to the new environment, culture, norms, values, processes, and procedures.
- Implemented test cases for Batch Controller and RESTful services, resulting in a 20% enhancement in application performance.
- Developed essential database scripts for onboarding new clients and implementing new models, facilitating seamless integration into the production environment.
- Developed a fraud engine application for robust training and testing of ML models using Apache Spark, Python, and Scala. Used MLeap for serialization and deserialization of model pipelines.
- Played a pivotal role in developing the AI Admin Portal, a React and Spring Boot application.
- Handled user requirements gathering, system architecture design, construction oversight, and deployment management.
- Reduced development time, delivered an efficient, error-free, and user-friendly application for AI process and data management.
- Set clear project milestones and coordinated team efforts, ensuring timely delivery. Successfully managed the project lifecycle from conception to launch, resulting in a highly functional and efficient portal.
- Developed customer support chatbots for external clients and an internal documentation chatbot using OpenAI GPT-3.5 Turbo API for streamlined access to information.
- Implemented embedding-based approaches, prompt engineering, and fine-tuning of GPT-3 on company datasets to align chatbots with business requirements and enhance response accuracy.
- Engineered a vector search engine and experimented with techniques like sparse/dense embeddings, RAG, and Splade to improve semantic search capabilities.

01/06/2022 – 22/11/2022 Lahore, Pakistan

### ASSOCIATE SOFTWARE ENGINEER - WEB INFINIKORN

- Implemented the Streetwyze web app using Ruby on Rails JavaScript and React, leveraging PostgreSQL as the database.
- Implemented the admin-lte web app using Ruby on Rails, leveraging PostgreSQL as the database.
- Implemented the daily-blog web app using Ruby on Rails and React, leveraging PostgreSQL as the database.
- Utilized various Ruby gems to extend functionality, including ActiveRecord for database management, Devise for authentication, RSpec for testing and HTTParty for handling HTTP requests.
- Demonstrated understanding of advanced Rails concepts, such as associations, validations, callbacks and nested resources.
- Gained insights into database management by working with PostgreSQL within the Rails environment.

- Developed knowledge of deployment options, security considerations and best practices for scaling Rails applications.
- Developed Rspects of Streetwyze, admin-lte and daily-blog web applications.

01/06/2022 – 31/07/2022 Lahore, Pakistan

## SOFTWARE ENGINEER - INTERN INFINIKORN

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- Demonstrated understanding of MVC (Model-View-Controller) architecture and its role in web application development.
- Utilized various Ruby gems to extend functionality, including ActiveRecord for database management, Devise for authentication, RSpec for testing and HTTParty for handling HTTP requests.
- Developed proficiency in Ruby programming language, covering syntax, data types, control flow structures, loops and functions.
- Implemented the Streetwyze web app using Ruby on Rails JavaScript and React, leveraging PostgreSQL as the database.
- Designed and implemented models, views and controllers for managing Streetwyze data.
- Integrated user registration, authentication, data input forms and data retrieval features into the Streetwyze application.
- Demonstrated understanding of advanced Rails concepts, such as associations, validations, callbacks and nested resources.
- Gained insights into database management by working with PostgreSQL within the Rails environment.
- Developed knowledge of deployment options, security considerations and best practices for scaling Rails applications.

## ● EDUCATION AND TRAINING

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28/10/2018 – 06/06/2022 Lahore, Pakistan

## BACHELOR'S OF SOFTWARE ENGINEERING Punjab University College of Information Technology

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**Address** 54600, Lahore, Pakistan

## ● LANGUAGE SKILLS

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Mother tongue(s): **URDU**

Other language(s): **ENGLISH**

## ● DIGITAL SKILLS

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Adaptability and flexibility | Problem-solving skills | Team Player

### Technical Skills

ROR | GreenPlum | Informix | Docker | Git | C# | Java | Python | React | C++ | Flutter | Linux | MySQL | PostgreSQL | Java Spring Boot | CSS | JavaScript | Scala | MongoDB | Microsoft Office | SQL (Greenplum/MySQL) | Bootstrap | HTML | Node.js | Postman

## ● PROJECTS

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### Batch Controller

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As a key member of AI team, played a pivotal role in developing BatchController API's for deploying machine learning models to predict fraud in financial transactions. Handled API's requests, extracting data, preprocessing and passing it through models for fraud predictions. Deployed API's to production environment for real-time predictions. Implemented security measures, including authentication, authorization, encryption, and input validation.

BatchController, an offline Java SpringBoot application, operates through four major services: Publish Service, Model Prediction Service, Creating Stats Service, and Save Stats Service. Transactions are read from the database and streamed into Kafka using the Publish Service. The Creating Stats Service processes transactions from the Kafka stream, generates stats, and the Save Stats Service stores these stats into the database.

To enhance team efficiency and streamline processes, implemented Maven in Java projects. This initiative resulted in improved code quality, accelerated deployment times by 15% and facilitated a more efficient setup for both the team and the product.

In addition to these technical accomplishments, conducted a thorough analysis of client requirements and system specifications to prepare test scenarios and document test cases. Implemented a series of test cases with a particular emphasis on Batch Controller services, resulting in a substantial 20% enhancement in application performance. These efforts not only elevated functionality but also significantly improved the reliability of the applications.

## Restful

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As a key member of AI team, played a pivotal role in developing Restful API's for deploying machine learning models to predict fraud in financial transactions. Handled API's requests, extracting data, preprocessing and passing it through models for fraud predictions. Deployed API's to production environment for real-time predictions. Implemented security measures, including authentication, authorization, encryption, and input validation.

Restful is an online Java SpringBoot application designed for generating hourly-based stats. The application processes transactions from the Kafka stream, computes relevant stats and then utilizes the Save Stats Service to store these stats into the database.

To enhance team efficiency and streamline processes, implemented Maven in Restful service. This initiative resulted in improved code quality, accelerated deployment times by 15%, and facilitated a more efficient setup for both the team and the product.

In addition to these technical accomplishments, conducted a thorough analysis of client requirements and system specifications to prepare test scenarios and document test cases. Implemented a series of test cases with a particular emphasis on Restful services, resulting in a substantial 20% enhancement in application performance. These efforts not only elevated functionality but also significantly improved the reliability of the applications.

## Fraud Engine

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As a key member of AI team, played a pivotal role in developing a robust fraud engine application for the comprehensive training and testing of machine learning models using Apache Spark, Python, and Scala. Utilizing a technology stack comprising MySQL, Python, Docker, GreenPlum and Informix created essential database scripts, facilitating the seamless onboarding of new clients and implementing new models into the production environment. Implemented the serialization and deserialization of model pipelines using the MLeap framework, enhancing overall efficiency. Developed statistical models based on historical data to improve fraud capturing efficiency and reduce losses. Analyzed client requirements and system specifications, formulating test scenarios and meticulously documenting test cases. Through the execution of a targeted series of test cases with a specific focus on Fraud Engine and Historical Stats services, achieved a significant 25% enhancement in application performance. These efforts not only elevated functionality but also markedly improved the overall reliability of the applications.

## AI Admin Portal

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As a key member of the AI team, played a pivotal role in developing the AI Admin Portal, a comprehensive application built using React and Spring Boot. Responsibilities encompassed gathering user requirements, designing the system architecture, overseeing construction, and managing deployment. Achievements include implementing efficient development practices that significantly reduced the overall project timeline, delivering a robust and reliable application through thorough testing and quality assurance, and designing an intuitive and user-friendly interface to enhance usability for managing AI processes and data. Additionally, set clear project milestones and coordinated team efforts to ensure timely delivery, successfully managing the project lifecycle from conception to launch, resulting in a highly functional and efficient portal.

## Chatbot

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As a key member of the AI team, played a pivotal role in developing the customer support chatbots for external clients utilizing the OpenAI API. Created an internal company documentation chatbot with the OpenAI GPT-3.5 Turbo API, facilitating streamlined access to information. Implemented chatbots using an embedding-based approach for more accurate responses and employed prompt engineering techniques to shape chatbot behavior and responses. Conducted fine-tuning of GPT-3 on company datasets via the OpenAI API, aligning the chatbots with specific business requirements. Engineered a vector search engine based on embeddings to enable the knowledge-based chatbot to retrieve relevant information effectively. Explored and experimented with techniques such as sparse/dense embeddings, Retrieval-Augmented Generation (RAG), and Splade to enhance the semantic search capabilities of chatbots.

## EVee

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Developed an Android application using the MERN stack for a shuttle service facilitating pick-up and drop-off for individuals between different points. This application includes two modules: Admin and Passenger. Passengers use a QR code generated during registration for travel verification. Access to the service is granted only to registered passengers with sufficient balance.

Admin users have multiple rights, including adding vehicles, scanning vehicles, locating vehicles, and tracking each user based on the vehicle's location. Developed EVee APIs covering registration, login, POS system, QR code generation, and various other functionalities. Managed API requests, extracted data for the shuttle service, and deployed APIs to the Heroku production environment, ensuring real-time service availability. Implemented security measures such as authentication, authorization, encryption, and input validation.

## Streetwyze

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Developed a Ruby on Rails web application for users to manage favorite places, ratings, stories, photos, and videos. Implemented essential Rails concepts, including associations, validations, and polymorphic behavior. Designed models for efficient data handling and retrieval. Created a question-based survey system specific to areas. Utilized advanced Rails features such as background job processing and caching. Demonstrated understanding of deployment options, security considerations, and scaling practices.

## Freelancing Work

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Developed an Android app facilitating clients to access online and physical services while offering freelancers an independent work platform to earn substantial income. Demonstrated expertise in Android development, delivering a user-friendly interface and seamless functionality. Created scalable and innovative solutions to meet the dynamic needs of clients and freelancers in a marketplace environment.

## Blog Applicaiton

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Developed a blog application using the ASP .NET MVC framework to provide a platform for users to write and publish their own blog posts. Leveraged my expertise in ASP .NET MVC to design and implement the application, ensuring a seamless and user-friendly experience. Implemented key features such as user authentication, blog post creation and management, and user commenting. Demonstrated strong skills in web development, specifically utilizing the ASP .NET MVC framework, to deliver a fully functional and intuitive blog application.

## Life Zest Pharmacy

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Developed the Life Zest Pharmacy app for database management using HTML, CSS, JavaScript, MySQL, and PHP. Leveraged my proficiency in front-end technologies such as HTML, CSS, and JavaScript to create a visually appealing and interactive user interface. Utilized PHP as the back-end scripting language to handle server-side functionalities and connect with the MySQL database for efficient data management. Implemented features for inventory management, customer records, and order processing within the Life Zest Pharmacy app. Demonstrated strong skills in web development, including database integration and management, to deliver a comprehensive solution for pharmacy operations.