

# Rehan Afzaal Abbasi

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## EXPERIENCE

### Machine Learning Engineer – Python developer

Akru LLC

November 2023 – Present, Islamabad, Pk

- Developed and optimized state-of-the-art machine learning project using Scikit-learn, Keras, and TensorFlow to achieve accuracy of up to 99% on multi-dimensional datasets.
- Developed Python backend APIs for collaborative predictive models to enable automation of over 70% of traditional user tasks, reducing the burden on manual resources by 35%.
- Refined Model Tuning Techniques such as cross validation, Hyperparameter optimization, Ensemble Learning, and Regularization to improve model accuracy by 24%.
- Developed real-time anomaly detection solutions with Logistic Regression and Decision Tree algorithms and improved system speed by 30%.
- Deployed the model to AWS and monitored performance with Grafana and CloudWatch.

### Data Scientist & ML Engineer

Confidential

December 2022 – November 2023, Islamabad, Pk

- Expertly leveraged Python and its libraries (NumPy, Pandas, Scikit-learn, Keras) to construct and fine-tune machine learning models for diverse applications, including classification, regression, and clustering.
- Developed and fine-tuned 10+ deep learning models, including convolutional and recurrent neural networks, for applications in computer vision and NLP, achieving an average improvement of 15% in model accuracy.
- Conducted research and implemented cutting-edge AI techniques, including large language models (LLMs) and generative adversarial networks (GANs), contributing to the forefront of AI technology.
- Led comprehensive machine learning projects from start to finish, encompassing data collection, cleaning, feature engineering, model development, evaluation, and deployment.
- Communicated complex data science concepts and model results effectively to stakeholders, ensuring clear understanding across various organizational levels.
- Committed to continuous learning and professional development, staying abreast of the latest advancements in data science, machine learning, and AI technology.

### Data Analyst/Scientist

Huawei Pk

September 2023 – December 2022, Islamabad, Pk

- Engineered Power BI tools for advanced data visualization in vehicle management, aligning with ML process innovation needs.
- Enhanced Huawei VMS efficiency through scripting, automating crucial processes.
- Analyzed over 1 million vehicular records using Excel and Power Query, identifying key operational patterns.
- Utilized Excel functions and macros for in-depth vehicular data analysis, applying optimization and hyperparameter tuning concepts.
- Led dynamic data collection and reporting for vehicle management, adapting to evolving business needs.
- Mastered Microsoft Power Platform for data management, demonstrating an integrated approach to system design.
- Organized large datasets in SharePoint Online, ensuring efficient data storage and retrieval.
- Collaborated with stakeholders to strategically align data analytics with business objectives.
- Translated complex data sets into actionable insights for decision-making, applying machine learning algorithms effectively.
- Applied PyTorch, NLTK, SciPy, Scikit-Learn, Numpy, and OpenCV for advanced data processing and image preprocessing tasks.

### Trainee – Data Scientist

Convergent Business technology

April 2023 – August 2021, Islamabad, Pk.

- Completed a comprehensive 6-month data science training program, encompassing theory, tools, and techniques.
- Mastered statistical concepts such as probability, distributions, hypothesis testing, and regression modeling, achieving a 95% score in practical assessments.
- Acquired advanced Python programming skills, utilizing data science libraries including Pandas, NumPy, and Scikit-Learn in over 15 projects.
- Managed end-to-end machine learning workflows for 5 major projects, involving data extraction, cleaning, exploration, feature engineering, model building, evaluation, and optimization.
- Gained proficiency in SQL, executing over 100 complex database queries for analytics purposes.
- Effectively communicated complex analysis and recommendations to audiences, including non-technical stakeholders, in over 10 presentations.

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## PROJECTS

Clone of Submagic.co Core Functionality with Enhanced AI

## Clone of Submagic.co's Core Functionality with Enhanced AI

- Conducted in-depth analysis of Submagic.co's core features, identifying key areas for AI enhancement and improvement.
- Designed and implemented an automated pipeline to process video files, extract audio, recognize speech, and generate SRT files, increasing processing efficiency by 40%.
- Developed custom Python scripts incorporating Whisper and Decipher APIs for advanced speech recognition, resulting in a 30% improvement in transcription accuracy.
- Seamlessly integrated speech-to-text transcription into subtitling workflow, incorporating precise timestamping.
- Implemented audio preprocessing, speaker diarization, and text cleaning optimizations, enhancing subtitle accuracy and readability.
- Boosted user retention by 25% through a task-based communication system, engaging users with the AI-enhanced clone of Submagic.io.
- Established a data lake for storing and analyzing subtitle files, contributing to a 20% improvement in model performance over six months.
- Documented all code, architecture, and deployment processes comprehensively, ensuring long-term maintainability and ease of updates.
- Collaborated proactively with the AI team to align the project roadmap and features with the overall product strategy, leading to more cohesive product development.
- Enhanced team collaboration and project efficiency through strategic planning and execution, resulting in the on-time delivery of the enhanced AI project.

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## EDUCATION

### Bachelor of science information technology, Information Technology

Arid University • Rawalpindi • 2020

### F.Sc Pre-Engineering

Steps College • Rawalpindi • 2016

### Matriculation in Science

Divisional Public School • Rawalpindi • 2014

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## CERTIFICATIONS

### Data Science & ML

Dice Analytics

- Attained certification in Data Science and Machine Learning Engineering, demonstrating advanced proficiency in key technologies and methodologies relevant to modern AI applications.

### Python for Data Science

IBM

- Successfully completed IBM's "Python for Data Science" course, deepening my expertise in Python and its application in data science, aligning with advanced analytical and machine learning project requirements.

### Foundations: Data, Data, Everywhere

Google

- Completed the "Foundations: Data, Data, Everywhere" course, furthering my understanding of contemporary data environments and enhancing my skills in managing and analyzing diverse datasets for AI applications.

### Data Science & Advanced Analytics

Boston Consulting Group (BCG)

- Acquiring hands-on experience in advanced analytics techniques and strategies, further aligning my skill set with industry-leading data science practices.

### GeneAI & LLM

Deeplearning.ai

- 1. Completed "ChatGPT Prompt Engineering for Developers," enhancing my skills in designing effective prompts for GPT-based models, crucial for optimizing AI-driven interactions. 2. Engaged in "Building Systems with the ChatGPT API," acquiring practical experience in integrating GPT-powered functionalities into diverse systems. 3. Participated in "LangChain for LLM Application Development," deepening my understanding of LLMs and their application in developing sophisticated AI solutions. 4. Studied "LangChain: Chat with Your Data," focusing on advanced techniques for conversational data interactions, improving my abilities in data-driven AI development. 5. Undertook "Large Language Models with Semantic Search," strengthening my expertise in semantic search technologies within the scope of large language models. 6. Completed "Fine-tuning Large Language Models," gaining insights into the customization and optimization of LLMs for specific application requirements. 7. Engaged in "Building Generative AI Applications with Gradio," where I learned to create user-friendly AI applications, enhancing user interaction with AI systems. 8. Studied "Understanding and Applying Text Embeddings," focusing on the use of text embeddings in natural language processing, crucial for developing sophisticated machine learning models.
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