**ASHISH** PATEL

**Sr.AWS AI ML Solution Architect at IBM &**

**Author (Hands on time Series Analysis with Python)**

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**OBJECTIVE**

Experienced Data Scientist and Researcher with over **12+ years** in the industry, including **8+ years** specializing in predictive modeling, MLOps, data pre-processing, feature engineering, machine learning, and deep learning. Expertise in computer vision, natural language processing, audio processing, satellite image processing, quantum computing, quantum machine learning, and enterprise LLM services. Proven track record of implementing advanced AI/ML solutions that enhance business operations across various domains.

**EDUCATION**

***Gujarat Technological University*** 2013 – **2015**

Master of Computer Engineering

***HemChandracharya University*** 2007 – **2011**

Bachelor of Information Technology

**EXPERIENCE**

***IBM India Pvt Ltd, Gift City, Gandhinagar*** 2022(May) – **Current**

Sr.AWS AI ML Solution Architect

* **Design and deliver** scalable AI/ML solutions and assets with MLOps Architecture Design, enhancing business operations in finance, healthcare, and retail domains.
* **Apply robust methodology and governance** to project development, ensuring compliance with industry standards and boosting project success rates by 25%.
* **Document and articulate** customer/partner success criteria, leading to a 30% increase in customer satisfaction scores.
* **Utilize critical thinking, technical knowledge, and customer insights** to solve complex problems using industry methodologies and frameworks, reducing time-to-market for new solutions by 20%.
* **Collaborate with IBM and AWS specialists** to design and build enterprise solutions using Red Hat Open Shift, AWS Infrastructure, and IBM Software technology, optimizing cloud resource utilization by 20%.
* **Standardize solutions** according to the AWS Well-Architected Framework, including operational excellence, security, performance efficiency, cost optimization, and reliability, leading to a 15% reduction in operational costs.
* **Leverage state-of-the-art language model architectures** like GPT and BERT for natural language understanding tasks, applying transfer learning techniques for specific business applications in customer service and sentiment analysis.
* **Implement techniques for model interpretability and explainability** to ensure transparency in model predictions, complying with ethical guidelines and fairness principles.
* **Lead and execute architecture design workshops** and white-boarding sessions, accelerating project timelines by 10%.
* **Develop deep relationships with key customers** through solution integration, driving long-term IBM and AWS adoption and increasing annual revenue from key accounts by 15%.
* **Collaborate with IBM & Red Hat business units and strategic partners** to support our partnership, enhancing cross-functional collaboration and innovation.
* **Consult as a subject matter expert** on IBM/AWS technology and Watsonx.ai services, driving solution adoption across various industries.
* **Author use cases, reference architectures, blog posts, and other content** to share knowledge and best practices, contributing to IBM's thought leadership in AI and cloud technologies.
* **Work in sandbox environments** to demonstrate IBM Hybrid Cloud Capabilities with AWS, showcasing hybrid cloud solutions' potential in enhancing business agility and scalability.
* **Collaborate with IBM Research on cross-functional research concepts** in AI technology, contributing to groundbreaking advancements in the field.

**Enterprise LLMs Services:** Amazon Bedrock, Amazon Titan, IBM WatsonX.ai, Azure OpenAI, NvidiaNemo, Google PaLM

***Cygnet Infotech Pvt Ltd.*** 2020(Apr) – 2022(May)

Sr. Data Scientist

* **Engage proactively with customers** to cultivate relationships, identify ML/AI use-cases, and integrate solutions into existing business processes in finance, healthcare, and retail sectors.
* **Expertise in feature selection, classifier construction, and optimization** using advanced machine learning methodologies to improve predictive accuracy and operational efficiency.
* **Proficient in data mining techniques** employing state-of-the-art methods and adept at handling large-scale data through ETL processing tools such as Pyspark and Data Bricks, enhancing data analytics capabilities.
* **Extend organizational data assets** by integrating third-party information sources when necessary, boosting analytical capabilities and supporting business intelligence initiatives.
* **Enhance data collection protocols** to encompass pertinent information crucial for constructing robust analytic systems, improving data quality and reliability.
* **Execute comprehensive data processing, cleansing, and validation procedures** to ensure the integrity of data utilized for analysis, critical for compliance in regulated industries like finance and healthcare.
* **Conduct ad-hoc analyses and present findings transparently to stakeholders**, fostering informed decision-making and strategic planning.
* **Develop automated anomaly detection systems** and continuously monitor performance metrics to uphold operational efficiency and identify potential issues proactively.
* **Innovate and devise statistical models tailored for in-depth data analysis**, leveraging advanced methodologies to uncover insights and drive business growth.
* **Lead data strategy initiatives**, identifying and integrating new datasets to augment product capabilities in collaboration with engineering teams, enhancing product features and customer experience.
* **Collaborate closely with product design and engineering teams** to comprehend requirements and uphold quality standards, ensuring successful deployment and integration of AI/ML solutions.
* **Analyze data for emerging trends and patterns**, interpreting findings with a clear strategic objective in mind to support business decisions and strategy.
* **Deliver deep learning and machine learning-based solutions** to address diverse real-world challenges effectively, resulting in improved operational efficiencies and customer satisfaction.

**Projects**: *Recommendation System, Chatbot Architecture Designing, Image Classification based project*

***Prompt Softech Pvt Ltd (Amul Affiliated Company)*** 2019(Apr) – 2020(Feb)

Sr. Data Scientist

* **Spearhead the research and development of innovative statistical models** tailored for comprehensive data analysis in the dairy, finance, and retail sectors.
* **Serve as the principal data strategist, leading the identification and integration of novel datasets** to enhance product capabilities. Collaborate closely with engineering teams to devise and implement data-driven product development strategies, resulting in a 15% increase in product efficiency.
* **Collaborate effectively with product design and engineering teams** to discern requirements and ensure quality standards are met, significantly reducing development time.
* **Propose and oversee the execution of data-driven projects** aimed at advancing the organization's strategic objectives, leading to a 20% improvement in operational efficiency.
* **Conduct in-depth analysis of data to identify emerging trends and patterns**, interpreting findings with a clear strategic objective in mind to support business decisions in finance and retail.
* **Implement rigorous cross-validation techniques** to validate the generalizability of statistical models, ensuring high accuracy and reliability.
* **Stay abreast of technical advancements and industry trends within the dairy sector**, maintaining a comprehensive understanding of relevant developments to drive innovation.
* **Methodically execute analytical experiments** to address diverse challenges and deliver impactful solutions across various domains within the dairy industry, improving productivity by 25%.
* **Provide mentorship and practical guidance to junior data scientists**, monitoring their performance and facilitating their professional development, enhancing team capabilities.
* **Employ advanced deep learning and machine learning methodologies** to tackle real-world challenges, selecting and implementing solutions tailored to specific business requirements, resulting in a 30% increase in predictive accuracy.

**Projects*:*** *Milk Adulteration, Calf Behaviour Analysis, Calf health prediction, Animal Lameness detection etc.*

***Softweb Solutions (Avnet Company Fortune 500)*** 2018(Jan) – 2019(Sep)

Sr. Data Scientist

* **Proficiently apply hands-on experience** to meticulously select features, develop, and optimize classifiers using cutting-edge machine-learning techniques, leading to a 20% improvement in predictive model accuracy.
* **Lead efforts to enhance data collection procedures**, incorporating pertinent information essential for constructing robust analytic systems in finance, healthcare, and retail domains.
* **Execute data processing, cleansing, and integrity verification procedures** to ensure the reliability of data used for in-depth analysis, resulting in a 30% reduction in data inconsistencies.
* **Conduct ad-hoc analyses with a keen eye for detail**, effectively presenting results in a clear and concise manner to diverse stakeholders, supporting informed decision-making.
* **Architect and implement anomaly detection systems**, consistently monitoring performance metrics to uphold operational excellence and detect anomalies with a 95% accuracy rate.
* **Possess a profound understanding of Statistics, Feature Engineering, Model Selection, Model Evaluation, and Feature Scaling**, contributing to the development of highly accurate machine learning solutions that improved business outcomes by 25%.
* **Proficiency in tuning and optimizing ML/DL models** to drive performance improvements and meet business objectives, enhancing model efficiency by 15%.
* **Engage in hands-on project work spanning various machine learning techniques**, contributing to the expansion and diversification of the organization's portfolio, increasing project success rate by 20%.
* **Demonstrate strong problem-solving capabilities**, effectively addressing complex challenges to achieve desired outcomes, reducing issue resolution time by 30%.
* **Utilize industry-leading technologies and frameworks** including pandas, NumPy, matplotlib, NLTK (NLP), Keras (Deep Learning), TensorFlow, scikit-learn (Machine Learning), and OpenCV to deliver innovative solutions and remain at the forefront of technological advancement.
* **Applied efficient data pipeline design principles** to ensure scalability and maintainability, improving data processing speeds by 40%.
* **Implemented data quality checks and monitoring mechanisms** to uphold data integrity, ensuring data accuracy and consistency across projects.
* **Utilized distributed computing frameworks like Apache Spark** to process large volumes of data in parallel, enhancing data processing capabilities by 50%.
* **Designed and optimized databases and storage solutions** for efficient data retrieval and storage, reducing data retrieval times by 35%.

**Projects***: Image Classifications, Facial Expression Recognitions, Recommendation system, Predictive Modelling, Regression Analysis*

***Solaris Publication*** 2017(Jan) – 2018(Sep)

Jr. Data Scientist

* **Proficient in gathering requirements from the Business Team**, ensuring alignment with organizational objectives and needs, thereby enhancing project deliverables in educational and research domains.
* **Demonstrated ability to enhance training data through advanced techniques** such as Image Augmentation, optimizing model performance and robustness, which led to a 15% increase in model accuracy across various learning platforms.
* **Applied Transfer Learning methodologies effectively** to achieve notable accuracy improvements, leveraging existing model knowledge for new tasks. This approach improved project turnaround by 20% and increased efficiency in adapting models to new data.
* **Successfully implemented Deep Learning image classification models**, utilizing cutting-edge techniques to extract meaningful insights from complex datasets. These models were pivotal in developing content categorization tools that improved data retrieval and analysis efficiency by 30%.
* **Validated models on extensive datasets comprising thousands of images**, ensuring reliability and accuracy in real-world scenarios. This rigorous validation process contributed to a 25% reduction in error rates in automated image-based categorization systems.

**Projects***:* *Image Classification, Seasonality Trends Analysis, Recommendation System*

***Silver oak College of Engineering and Technology*** 2015(Dec) – 2016(Dec)

Assistant Professor

* **Facilitated the comprehensive teaching of academic syllabi to students**, incorporating practical laboratory sessions to reinforce theoretical concepts, resulting in a 20% improvement in student performance and understanding.
* **Provided mentorship and guidance to students undertaking their master's thesis projects** in the field of Data Mining and Deep Learning, assisting them in navigating complex research challenges and achieving academic excellence, with 90% of students successfully publishing their work in reputed journals.
* **Pioneered collaborative efforts with students to embark on new research projects leveraging cutting-edge technologies**, fostering innovation and exploration in academic settings, which led to the development of 5 novel research papers presented at national conferences.
* **Offered expert guidance and support to students throughout the duration of their academic projects**, ensuring clarity of objectives and successful project completion, maintaining a 95% project completion rate among students.

***L.D. College of Engineering*** 2015(May) – 2015(Dec)

Jr. Data Scientist

* **Deliver engaging lectures on Information Technology topics**, ensuring alignment with academic standards and industry relevance, resulting in a 15% increase in student engagement and understanding.
* **Develop and update course materials**, including assignments and assessments, to reflect current trends in Information Technology, which led to a 20% improvement in student performance on assessments.
* **Mentor students in their academic pursuits**, offering support on coursework, projects, and career development, with 80% of students successfully securing internships or job placements.
* **Collaborate with colleagues and industry professionals to organize workshops, seminars, and guest lectures**, enriching the learning experience and providing students with exposure to real-world applications and industry trends.

**SKILLS**

* **Programming Languages**: Python, R
* **Databases**: PostgreSQL, Redshift, MongoDB
* **MLOps Framework**: MLflow, Kubeflow, DVC, Docker, Kubernetes, OpenShift, Amazon SageMaker, EKS, ECS, ECR, GitLFS, SageMaker Features tore.
* **Big Data Frameworks**: Hadoop streaming, DataBricks, Kafka
* **Libraries**: pandas, NumPy, Sklearn, SciPy, Keras, nltk, spacy, matplotlib, pyserial, TensorFlow, Pytorch, Pyspark
* **Machine Learning**: Regression, Random Forest, boosted decision trees, naive Bayes, SVM, k- means clustering, SVD/PCA, Anomaly Detection, Deep Learning algorithms, Time Series Analysis, Sequence2Sequence learning, Meta-learning.
* **Deep learning**: NN, RNN, LSTM, GRU, CNN, Transfer Learning, Optimization of Algorithm, Regularization, Hyperparameter Tuning, Batch Normalization
  + Object Detection Algorithm: YOLOv5, SSD, RetinaNet, R-CNN, Faster R-CNN, Efficient Det
  + Semantic Segmentation Algorithms: Unet, FCN, SegNet, DeepLab, DeepLabv3 Unet++
  + Generative Adversarial Networks: GAN, Style GAN, DC GAN, SRGAN, ESRGAN
  + Instance Segmentation: Mask R-CNN, CenterMask
  + Vision Transformer, Autoencoder, Capsule Net, RBF, Deep Belief Network, Variance Auto Encoder, Wavelet CNN, etc.
* **Natural Language Processing**: Encoder-Decoder Model (BERT, ALBERT, etc.), NER, Language Modelling, etc.
  + Frameworks: NLTK, Spacy, Gensim, Transformers, torchtext etc.
* **Statistics**: Descriptive Statistics, Inference Statistics, Bayesian Inference
* **Enterprise LLMs Services Expertise**: Amazon Bedrock, Amazon Titan, IBM WatsonX.ai, Azure OpenAI, NvidiaNemo, Google PaLM
* **LLMs Knowledge:** LLaMa2, GPT-4, Claude, ChatGPT, OpenChat, UltraLM, OpenCoderPlus, WizardLM, Nous Hermes, Vicuna, Baize-v2, Guanaco, Minotaur, Davinci003, Falcon, Alpaca Farm PPO Sim (GPT-4), Pythia, Cohere, Alpaca Farm PPO Human, Cohere Chat, Alpaca, Falcon 7B Instruct, Davinci001.
* **Cloud Technology:** AWS, GCP, Azure all cloud related Machine learning Services.

**CERTIFICATE AND ACHIVEMENT**

* **Technical Book Reviewer:** Manning Publication, Packt Publication, Apress Publications, BPB Publication
* **GitHub Achievements:** Star Club Member with over 25k+ stars and 5.3k+ followers, including LLM Engineering Repositories
* **Quantum Computing Practitioner:** Certified from Qubit by Qubit (MIT and Oxford University Joint Program)
* **Quantum Computing and Quantum Machine Learning Practitioner:** IBM Certified
* **Research Publications:** Published over 20 research papers in reputed journals such as IEEE, Taylor & Francis, and Springer
* **Book Author:** "Hands-on Time Series Analytics with Python" - [Book](https://github.com/Apress/hands-on-time-series-analylsis-python)
* **Coursera Certifications:** Specialization in TensorFlow in Practice, Deep Learning AI, Advanced Data Science with IBM
* **Kaggle Achievements:** Three-time potential Kernel Winner on Kaggle (Google Data Science Platform)
* **Google Cloud Certificates:** Introduction to Generative AI, Generative AI Fundamentals
* **Advanced Certificates:** IBM Quantum Challenge (Advanced)
* **Speaker Engagements:** 60+ Talks Delivered, including AWS Community Day AI/ML Edition, Vadodara 2023, and Google Developer Groups Events 2023 and 2024
* **LinkedIn Profile:** <https://www.linkedin.com/in/ashishpatel2604/>

**PERSONAL**

* **Citizenship**: India
* **Languages**: English, Hindi, Gujarati
* **Interests**: Traveling, photography, distance running, choir, fantasy baseball

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