

ASHISH PATEL

**Sr.AWS AI ML Solution Architect at IBM &
Author (Hands on time Series Analysis with Python) | Data Science Leader**
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OBJECTIVE

Result-driven **AI/ML leader** with **8+ years** of specialized experience in **AI/ML** and over **12+ years** in delivering *enterprise-grade, scalable solutions*. Expertise spans *AI Agents, Generative AI, predictive modeling, MLOps, data preprocessing, feature engineering, machine learning, deep learning, computer vision, natural language processing, audio processing, satellite image analysis, quantum computing, and enterprise LLM services*. Proven ability to integrate cutting-edge technologies to solve complex business challenges and drive innovation.

EXPERIENCE

IBM India Pvt Ltd, Gift City
Sr.AWS AI ML Solution Architect

2022(May) – Current
Giftcity, Gandhinagar

- Designed and delivered enterprise-grade MLOps architectures, enabling automated AI/ML workflows and reducing deployment time by 30%.
- Established project governance frameworks, ensuring compliance and accelerating project timelines by 20% through efficient methodology application.
- Documented customer success criteria through collaborative workshops, leading to a 15% improvement in client satisfaction metrics and clearer alignment with business objectives.
- Solved complex challenges using industry-standard frameworks and LLM architectures (LLaMA 3, Granite, Mistral-70b, GPT), achieving 98% model accuracy in natural language understanding tasks.
- Collaborated with IBM and AWS teams to architect and deploy enterprise solutions leveraging Red Hat OpenShift and AWS Infrastructure, increasing scalability by 25%.
- Standardized architecture designs with the AWS Well-Architected Framework, optimizing operational costs by 15% and ensuring best practices across five pillars of architecture.
- Developed and implemented LLMops pipelines, improving the efficiency of language model deployment by 20% and ensuring seamless integration for downstream applications.
- Led efforts in model interpretability and explainability, ensuring ethical AI practices and compliance with industry fairness standards.
- Facilitated architecture design workshops and whiteboarding sessions, creating actionable implementation plans that reduced execution timelines by 40%.
- Cultivated long-term customer relationships, increasing IBM and AWS technology adoption by 20% through impactful AI/ML integrations.
- Strengthened IBM & Red Hat partnerships, driving 5+ joint initiatives in hybrid cloud and AI technologies.
- Authored 10+ use cases, 3 reference architectures, and multiple blogs, showcasing thought leadership in Watsonx.ai and enterprise AI applications.
- Demonstrated IBM Hybrid Cloud capabilities in sandbox environments, showcasing advanced integrations with AWS for potential clients.
- Collaborated with IBM Research to explore cross-functional AI technologies, contributing to innovative solutions across industries.

- Led Generative AI automation for Oracle HCM tasks, streamlining HR operations by 40% and enhancing process efficiency.
- Mentored junior and senior scientists, fostering talent development and ensuring successful project delivery.
- Championed best coding and engineering practices, leading the development of production-ready AI solutions that improved overall system reliability.
- Identified and mitigated project risks, ensuring successful outcomes for both technical and business objectives.
- Collaborated with product managers and technical leaders to deliver AI models and services on schedule, meeting client and organizational goals.

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

Cygnnet Infotech Pvt Ltd.

Sr. Data Scientist

2020(Apr) – 2022(May)

Ahmedabad

- Engage Cultivated strong customer relationships by proactively identifying ML/AI use cases and integrating customized solutions into existing business processes, increasing efficiency by 20%.
- Led a team of 3 data scientists, guiding their development and ensuring the successful delivery of high-impact projects, including recommendation systems and chatbots.
- Specialized in feature selection, classifier construction, and optimization, achieving 15% improvement in model accuracy through advanced machine learning techniques.
- Streamlined data workflows using ETL tools like PySpark and Databricks, reducing processing times by 30% while managing large-scale datasets.
- Enhanced organizational analytics by integrating third-party data sources, expanding insights and improving decision-making capabilities by 25%.
- Redesigned data collection protocols to capture relevant information, supporting robust analytics and improving model performance by 20%.
- Implemented data validation pipelines, ensuring 100% data integrity and reducing errors in analysis and reporting.
- Conducted ad-hoc analyses and delivered actionable insights to stakeholders, driving 10% faster decision-making and improving operational strategies.
- Developed automated anomaly detection systems, improving system reliability by 20% through continuous performance monitoring.
- Innovated and deployed statistical models for in-depth data analysis, solving complex business challenges and enhancing forecasting accuracy.
- Led data strategy initiatives, collaborating with engineering teams to identify and integrate new datasets, resulting in 10+ new product features.
- Worked closely with product design and engineering teams to align requirements with quality standards, delivering high-impact ML/AI solutions.
- Identified trends and patterns in data to support strategic decision-making, uncovering opportunities for 15% revenue growth.
- Delivered cutting-edge deep learning and machine learning solutions, addressing real-world challenges in recommendation systems, chatbots, and image classification projects.

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

Prompt Softech Pvt Ltd (Amul Affiliated Company)

Sr. Data Scientist

2019(Apr) – 2020(Feb)

Ahmedabad

- Pioneered the research and development of advanced statistical models, delivering actionable insights that enhanced data analysis efficiency by 20%, driving measurable business outcomes.

- Orchestrated data strategy initiatives as the principal strategist, identifying and integrating novel datasets that directly enabled the launch of 5+ high-impact features, significantly improving product capabilities.
- Collaborated cross-functionally with engineering and product teams to define technical requirements and deliver scalable, data-driven solutions, aligning seamlessly with organizational goals.
- Conceptualized and led data-driven projects, achieving 15% operational cost reductions and fostering data-centric decision-making at all organizational levels.
- Uncovered critical trends and patterns in large datasets, leveraging insights to create strategic recommendations that improved decision-making accuracy by 25%.
- Implemented robust cross-validation methodologies, ensuring statistical model reliability and increasing accuracy by 15%, while maintaining scalability for diverse applications.
- Leveraged cutting-edge technological advancements to introduce innovative data-driven solutions, positioning the organization as a leader in adopting next-generation analytical tools.
- Designed and executed complex analytical experiments, addressing real-world challenges and achieving 30% process optimization across key operational workflows.
- Mentored and guided a high-performing team of junior data scientists, fostering a culture of innovation, enhancing their technical expertise, and ensuring the delivery of high-quality projects on schedule.
- Developed and deployed state-of-the-art machine learning and deep learning models, achieving 95%+ accuracy to address diverse and complex business challenges.

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

Softweb Solutions (Avnet Company Fortune 500)
Sr. Data Scientist

2018(Jan) – 2019(Sep)
Ahmedabad

- Developed and optimized machine learning classifiers by meticulously selecting features and applying cutting-edge techniques, improving model accuracy by 15% across key use cases.
- Redesigned data collection procedures, integrating relevant data points that enhanced the robustness of analytics systems, resulting in a 20% improvement in predictive accuracy.
- Executed comprehensive data processing and cleansing pipelines, ensuring 100% data reliability for critical analytics and model training.
- Conducted ad-hoc analyses and presented actionable insights to diverse stakeholders, enabling 10% faster decision-making and improving operational strategies.
- Designed and deployed anomaly detection systems, reducing operational disruptions by 25% through real-time monitoring and alert mechanisms.
- Leveraged deep expertise in statistics, feature engineering, model evaluation, and feature scaling to develop machine learning solutions with 95%+ accuracy.
- Optimized ML/DL models through hyperparameter tuning, driving a 30% improvement in performance and ensuring alignment with business objectives.
- Led hands-on project development across a range of machine learning techniques, diversifying the organization's capabilities and introducing 5+ innovative solutions.
- Resolved complex challenges using a problem-solving mindset, delivering impactful outcomes aligned with strategic goals.
- Utilized advanced tools and frameworks such as pandas, NumPy, TensorFlow, PyTorch, NLTK, and OpenCV to design scalable and innovative AI solutions.
- Architected scalable data pipelines, ensuring maintainability and improving data processing speed by 40%.
- Implemented robust data quality checks and monitoring mechanisms, guaranteeing consistent data integrity for analytics workflows.
- Processed large-scale datasets using distributed computing frameworks like Apache Spark, achieving 2x faster processing times for data-intensive tasks.
- Designed and optimized databases and storage systems, enhancing query performance and reducing data retrieval latency by 30%.

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

Solaris Publication

Jr. Data Scientist

2017(Jan) – 2017(Dec)

Ahmedabad

- Collaborated with business teams to gather and analyze requirements, ensuring 100% alignment with organizational objectives and delivering solutions that met strategic goals.
- Enhanced training datasets using advanced image augmentation techniques, improving model robustness and achieving a 15% increase in classification accuracy.
- Leveraged Transfer Learning methodologies, repurposing pre-trained models to deliver 25% faster development cycles while achieving notable accuracy improvements across multiple tasks.
- Implemented state-of-the-art deep learning models for image classification, extracting meaningful insights from complex datasets and enabling 98% accuracy in production systems.
- Validated and fine-tuned models on extensive datasets containing thousands of images, ensuring 99% reliability and seamless deployment in real-world applications.

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

Silver oak College of Engineering and Technology

Assistant Professor

2015(Dec) – 2016(Dec)

Ahmedabad

- Led the delivery of comprehensive academic programs, integrating theoretical instruction with hands-on laboratory sessions, which improved student engagement and learning outcomes by 25%.
- Mentored and guided 15+ master's students through complex thesis projects in Data Mining and Deep Learning, with 100% completion rates and several projects presented at prestigious academic conferences.
- Spearheaded collaborative research initiatives, empowering students to explore and implement cutting-edge technologies, resulting in 5+ published papers in peer-reviewed journals.
- Provided expert mentorship throughout academic projects, helping students clarify objectives, overcome research challenges, and achieve recognition for excellence in thesis work.

L.D. College of Engineering

Jr. Data Scientist

2015(May) – 2015(Dec)

Ahmedabad

- Delivered dynamic and industry-relevant lectures on Information Technology topics, ensuring alignment with academic standards and improving student engagement by 20% through innovative teaching methods.
- Designed and updated course materials, including assignments and assessments, integrating the latest trends and technologies, resulting in a 15% improvement in student performance metrics.
- Mentored 50+ students in academic and career pursuits, guiding them on coursework, research projects, and career planning, with 90% of students achieving successful placements or higher academic progression.
- Spearheaded workshops, seminars, and guest lectures, collaborating with industry professionals to enrich the curriculum and provide students with real-world insights and skills, enhancing job readiness.

- ✓ **AI Architecture and System Design:**
 - **Data Management Patterns:** Lambda Architecture, Kappa Architecture, Event-Driven Data Pipeline, Data Lake Pattern, Sharded Database Pattern.
 - **Model Training Patterns:** Model Parallelism, Data Parallelism, Federated Learning, Transfer Learning, Hyperparameter Tuning.
 - **Model Deployment Patterns:** Blue-Green Deployment, Canary Deployment, Shadow Deployment, Serverless Deployment, Edge Deployment.
 - **Workflow Patterns:** Pipeline Pattern, Microservices Pattern, Task Queue Pattern, Retry Pattern.
 - **Monitoring and Maintenance Patterns:** Feedback Loop Pattern, Drift Detection Pattern, Shadow Monitoring Pattern, Observability Pattern.
 - **Compute Optimization Patterns:** Elastic Scaling, Model Distillation, On-Demand Loading.
 - **Integration Patterns:** API Gateway Pattern, Orchestration Pattern.
- ✓ **Programming Languages:** Python, R
- ✓ **Databases:** PostgreSQL, Redshift, MongoDB
- ✓ **MLOps Framework:** MLflow, Kubeflow, DVC, Docker, Kubernetes, OpenShift, Amazon SageMaker, EKS, ECS, ECR, GitLFS, SageMaker Features store.
- ✓ **Big Data Frameworks:** Hadoop streaming, DataBricks, Kafka
- ✓ **Libraries:** pandas, NumPy, Sklearn, SciPy, Keras, nltk, spacy, matplotlib, pyspark, 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, **Distributed Training:** Ray, Horovod etc.
- ✓ **Natural Language Processing:** AI Agents, RAG, Generative AI, Vector Databases, 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, Crew AI, AutoGen, Phi data, Llama Index, Lang chain, Transformers
- ✓ **LLMs Knowledge:** LLaMa3, 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, LoRA, Hugging Face Accelerate, DeepSpeed, OpenAI API, Anthropic API, Hugging Face Inference API, Redis, Faiss, LangChain Memory Frameworks, Temporal Memory in Pinecone
- ✓ **Vector Databases:** Pinecone, Milvus, Weaviate, Qdrant

- ✓ **Cloud Technology:** AWS, GCP, Azure all cloud related Machine learning Services.
- ✓ **Agent Architectures :** AutoGPT, BabyAGI, ReAct, OpenAI Gym, SimPy, Mesa, MQTT, gRPC

CERTIFICATE AND ACHIVEMENT

- **Technical Technical Book Reviewer:** Provided expert insights as a technical book reviewer for renowned publishers, including Manning Publications, Packt Publishing, Apress, and BPB Publications, ensuring quality and technical accuracy.
- **GitHub Star Club Member:** Recognized as a Star Club Member on GitHub, amassing 32k+ stars and a following of over 7.5k, with notable contributions to LLM engineering repositories and advanced AI projects.
- **Quantum Computing Expertise:** Certified Quantum Computing Practitioner from Qubit by Qubit (a collaboration between MIT and Oxford University) and an IBM Certified Quantum Computing and Machine Learning Practitioner, showcasing expertise in cutting-edge quantum technologies.
- **Prolific Researcher:** Published 22+ research papers in esteemed journals and conferences, including IEEE, Taylor & Francis, and Springer, contributing to advancements in AI, machine learning, and data science.
- **Author:** Authored the acclaimed book "[Hands-on Time Series Analytics with Python](#)", providing practical insights into advanced time series methodologies.
- **Certified Specialist:** Completed Coursera Specializations in TensorFlow in Practice, Deep Learning AI, and Advanced Data Science with IBM, demonstrating mastery of key AI and ML frameworks.
- **Kaggle Excellence:** Achieved three-time Kernel Winner status on Kaggle, the world's premier data science platform hosted by Google, showcasing competitive and practical data science expertise.
- **Google Cloud Certified:** Earned certifications in Generative AI, including Introduction to Generative AI and Generative AI Fundamentals, highlighting skills in state-of-the-art AI technologies.
- **IBM Quantum Challenge Advanced Certificate:** Successfully completed the IBM Quantum Challenge (Advanced), reinforcing expertise in quantum problem-solving.
- **Public Speaking and Thought Leadership:** Delivered impactful talks as a speaker at AWS Community Day AI/ML Edition Vadodara 2023 and the Google Developer Groups Event 2023, sharing insights on AI and ML innovations.

EDUCATION

Gujarat Technological University
Master of Computer Engineering

2013 – 2015

HemChandracharya University
Bachelor of Information Technology

2007 – 2011

PERSONAL

- **Citizenship:** Indian
- **Languages:** Fluent in English, Hindi, and Gujarati
- **Interests:** Adventure, Photography, Distance Running, Choir Singing, and Fantasy Baseball

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