Sanjay Chintamani Patel

Full Stack AI Architect(AI, AI Agent, Agentic AI)

Technical Skill

- **LLMs & Foundation Models**: GPT-4o, Claude (Anthropic), Gemini, Llama 2/3, Mistral, Mixtral, DeepSeek, Phi-3/Phi-4, Ollama, OpenAI APIs, Hugging Face Transformers
- **Programming**: Python, FastAPI, REST APIs, C#.NET, ASP.NET Core, JavaScript, TypeScript, Node.js, SQL, Bash/Shell Scripting, YAML
- **Agentic AI Frameworks**: LangChain, LangGraph, LlamaIndex, CrewAI, AutoGen, Semantic Kernel, Langflow, LangFuse, LangWatch, Haystack, DSPy, OpenDevin, RAG, AI Agents, Multi-Agent Systems, Prompt Engineering, Function Calling, MCP (Model Context Protocol)
- **AI/ML Libraries & NLP**: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, XGBoost, spaCy, NLTK, OCR, Computer Vision, NLP, ML Algorithms, Random Forest
- **Vector Databases & Data Platforms**: Pinecone, Weaviate, FAISS, ChromaDB, Qdrant, Milvus, MongoDB Atlas Vector Search, PostgreSQL (pgvector), Elasticsearch
- **DevOps, MLOps & Observability**: Docker, Kubernetes, MLflow, Kubeflow, GitHub Actions, CI/CD Pipelines, Azure DevOps, Terraform, Splunk, Dynatrace, Prometheus, Grafana
- **Storage & Databases**: Azure Cosmos DB, Azure Blob Storage, Azure SQL Database, Azure Data Factory, Databricks, MySQL, MongoDB, DynamoDB, Firestore, AlloyDB, RDS
- **AI Solution Capabilities**: AI Agent Development, Multi-Agent Orchestration, Enterprise RAG Systems, Conversational AI, Copilot Development, LLM Fine-Tuning, Vector Search
- **Cloud & AI Platforms**: Microsoft Azure (Azure OpenAI, AI Foundry, AI Search, Azure ML, Functions, Logic Apps, API Management, AKS, Key Vault), AWS (Bedrock, SageMaker, EC2, ECS, EKS, Lambda, S3, CloudWatch), GCP (Vertex AI, Gemini APIs, BigQuery, Cloud Functions, GKE, Cloud Run)

Education Background

- DY Patil University, Navi Mumbai
  Part-Time **Ph.D. in AI in Healthcare** (Pursuing)
  Expected Studying: 2026-2030 (4 Years)
- Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune
  MBA in AI/ML Engineering
  Completed in 2026 (2 Years)
- DY Patil College of Engineering & Technology
  Bachelor of Engineering **(B.E.) in CSE**
  Completed in 2018 (3 Years)
- Marathwada Mitra Mandal's Polytechnic
  Diploma in CSE (MSBTE Board)
  Completed in 2015 (3 Years)

About Me

Currently working as Full Stack AI Engineering with 6.5+ years of experience specializing in Generative AI, Agentic AI, AI Agents, and enterprise AI modernization across BFSI, Healthcare, Manufacturing, Data Intelligence domains. I have proven expertise in designing & delivering scalable, secure, & production-grade AI platforms that bridge the gap between legacy enterprise systems & modern cloud-native AI ecosystems. I have strong experience in building intelligent solutions using Large Language Models (LLMs), Multi-Agent Systems, Retrieval-Augmented Generation (RAG), Vector Databases, & advanced AI orchestration frameworks including LangChain, LangGraph, CrewAI, &similar technologies. I also have skilled in transforming complex business problems into AI-driven platforms such as conversational AI systems, intelligent automation, financial anomaly detection, predictive analytics, & multi-agent decisioning systems... Recent worked at TCS, where I led the design & development of the e-Zenit Customer Onboarding Platform using an Agentic AI ecosystem with advanced RAG architecture. I am certified in Microsoft Azure, AWS, Google Cloud Platform, & Databricks technologies.

Certifications

- AWS Certified Machine Learning Engineer Associate
- AWS SimuLearn: Generative AI Practitioner
- Microsoft Certified: Azure Administrator Associate
- Microsoft Certified: Azure Solutions Architect Expert
- Microsoft Certified: DevOps Engineer Expert
- IBM CO0101EN: Docker Essentials: A Developer Introduction
- IBM DB0101EN: SQL and Relational Databases 101
- IBM Containers & Kubernetes Essentials
- Databricks Accredited Lakehouse Fundamentals
- Databricks Accredited Generative AI Fundamentals
- IBM CC0210EN: Serverless Computing using Cloud Function
- IBM: Containers & Kubernetes Essentials
- AI for Cloud Issued by O'Reilly Media
- Microsoft Certified: Azure AI Fundamentals
- Google Cloud Certified Generative AI Leader
- Microsoft Skilled: Build AI apps and agents with Azure
- MongoDB Skilled: Building AI Agents with MongoDB
- MongoDB Skill: Building AI-Powered Search with MongoDB Vector Search
- AI Agents with MCP by O'Reilly Media
- Kubernetes for AI Deployment by Pearson
- Generative AI APIs by Pearson
- Microsoft Tech Deal Ready Proficient: AI-driven in Azure AI Foundry
- RAG Applications LlamaIndex by O'Reilly Media
- MongoDB Skilled: Building RAG Apps Using MongoDB
- Agentic AI Agents by Pearson
- AWS AI Practitioner Challenge
- IBM PY0101EN: Python 101 for Data Science
- Many More

Professional Experience

Job Role 1 - Tata Consultancy Services (IT Analyst - Full Stack AI Acrhitect)

14 May 2018 - 24 July 2026 · (2.2 Years of Working Experience)

Client Project 1: DNB e-Zenit AI Customer Onboarding & Intelligent Middleware

As a Full Stack AI Architect, I led the design and development of the **e-Zenit AI Customer Onboarding platform**, a mission-critical enterprise banking solution re-architected into a **fully Agentic AI ecosystem**. The platform enables seamless onboarding of Norwegian, Non-Norwegian, institutional, and financial customers through a single intelligent AI interface, automating end-to-end KYC/Kundekontroll, AML compliance, customer creation, & account setup.

Key Responsibilities & Contributions:

- Designed a **multi-agent onboarding architecture** using LangChain & LangGraph to enable autonomous decision-making across customer onboarding workflows.
- Built **Agentic AI workflows** for KYC, AML validation, tax reporting, customer classification, & agreement management.
- Developed **enterprise-grade RAG pipelines** for retrieval of banking regulations, compliance documents, and customer records using Azure Cosmos DB Vector Search and Azure Blob Storage.
- Implemented **AI-driven customer onboarding across multiple channels** (Netbank, Mobile Banking, internal CRM systems) with Zenit Kundefront as the central orchestration layer.
- Integrated core banking systems such as **Felix (customer data)** and **KVH (CRM/sales intelligence)** to provide real-time customer insights to AI agents.
- Designed **secure AI middleware using Azure AI Foundry** to orchestrate private LLMs (Ollama) with fallback to GPT-based models for complex reasoning.
- Implemented **compliance-aware AI guardrails**,ensuring adherence to strict banking regulations, auditability, and role-based access control (RBAC).
- Established **LLMOps/MLOps pipelines using GitHub Actions and Terraform (IaC**) for automated deployment and infrastructure management.
- Integrated **RAG evaluation frameworks (Ragas)** to continuously validate retrieval accuracy and response reliability.
- Built **observability dashboards using Splunk and Azure Application Insights** to monitor latency, cost, token usage, & system health.
- Delivered a **fully automated onboarding system,** significantly reducing manual intervention

Client Project 2: DNB CENTRIX - Centralized Incident Tracking & eXecution Platform (Internal)

I designed & developed **DNB CENTRIX**, an AI Agent-enabled **enterprise incident management and developer assistance platform** that leverages Hybrid RAG architecture to provide intelligent debugging, issue resolution, and automated incident routing.

Key Responsibilities & Contributions:

- Built an **AI-powered incident resolution assistant** that enables developers to query, analyze, and resolve production issues using natural language.
- Designed a **Hybrid RAG architecture (vector + non-vector retrieval)** combining Confluence documentation, internal portals, and source code repositories.
- Implemented **AI agents for incident triage and resolution recommendation**, capable of analyzing logs, error patterns, and historical fixes.
- Developed **intelligent ticket routing system**, where AI agents assign incidents to the most suitable developer based on skill matching and past resolution history.
- Integrated **enterprise knowledge sources** (Confluence, internal documentation, code repositories) into a unified semantic search system.
- Designed LLM-based reasoning layer for root cause analysis and step-by-step debugging suggestions.
- Built secure **API-driven microservices architecture using FastAPI and containerized deployments** with Docker/Kubernetes.
- Implemented **RAG optimization strategies** for improving retrieval accuracy and reducing hallucinations in technical responses.
- Enabled **developer productivity improvement** by reducing incident diagnosis time and improving resolution accuracy through AI assistance.

Project Client 3 : Ultimatix Gigs Enterprise Solution – AI Enabled Chatbot Portal (TCS Interactive)

I designed &developed an **AI-powered enterprise chatbot platform** within Ultimatix Gigs that enables employees to perform end-to-end HR and internal operations through natural language interaction. The system acts as a **centralized intelligent assistant** capable of executing actions such as leave applications, timesheet submissions, HR policy retrieval, project allocation details, manager/team information, and other internal enterprise workflows.

The solution was built using **Agentic AI architecture with multi-agent orchestration (A2A, MCP or CrewAI)**, where specialized AI agents handle different enterprise domains (HR Agent, Policy Agent, Timesheet Agent, Employee Info Agent). A Retrieval-Augmented Generation (RAG) pipeline was implemented to fetch real-time enterprise knowledge from internal systems, documents, and APIs, ensuring accurate and contextual responses**.**

Key Responsibilities & Contributions:

- Designed and implemented an **Agentic AI-based enterprise chatbot ecosystem** to automate HR and IT service workflows inside Ultimatix.
- Built **RAG pipelines** to connect enterprise knowledge sources such as HR policies, employee data, project databases, and internal documentation.
- Developed **AI Agents using LangChain / LangGraph-style orchestration** to execute multi-step actions like leave approval requests, timesheet submission, and policy retrieval.
- Integrated chatbot with **enterprise APIs and backend services** for real-time actions (leave management system, timesheet system, employee directory).
- Implemented **LLM-based intent classification, function calling, and tool selection** mechanisms to map user queries to correct business actions.
- Designed secure **authentication and role-based access control (RBAC)** for employee-specific data access.
- Optimized response accuracy using **vector databases and semantic search technique**s for fast retrieval of internal knowledge.
- Deployed solution on **cloud-native infrastructure using Azure / AWS services** with containerized microservices (Docker, Kubernetes/AKS).
- Implemented monitoring, logging, and observability for chatbot interactions using enterprise-grade tools.
- Improved employee productivity by reducing dependency on manual HR and IT support channels.

Technologies Used:

Agentic AI & Frameworks: LangChain, LangGraph, CrewAI, AutoGen, Semantic Kernel, MCP (Model Context Protocol), A2A (Agent-to-Agent), RAG, Hybrid RAG, AI Agents, Multi-Agent Orchestration, Prompt Engineering, Function Calling
LLMs & Foundation Models: GPT-based models, Azure OpenAI Service, Open-source LLMs (Ollama), Claude (Anthropic), Gemini, AWS Bedrock
Cloud Platforms: Microsoft Azure (Azure AI Foundry, AKS, Azure Functions, Azure AI Search, Cosmos DB, Blob Storage) AWS (Lambda, S3, API Gateway, EC2, EKS) GCP (Vertex AI, BigQuery – optional usage context)
Backend & API Layer: Python, FastAPI, REST APIs, Microservices Architecture
Databases & Storage: Azure Cosmos DB (Vector Search), Pinecone, FAISS, Weaviate, MongoDB, SQL Databases, PostgreSQL (pgvector), Elasticsearch
Orchestration & Integration: MCP (Model Context Protocol), CrewAI, A2A Agent Communication, Event-driven workflows
DevOps, MLOps & LLMOps: Docker, Kubernetes (AKS/EKS), CI/CD Pipelines, GitHub Actions, Terraform (IaC), MLflow

Job Role 2 - Mobile Programming LLC (MLOps Engineer)

19 Dec. 2023 – 12 Mar. 2024 (3.2 Months of Experience)

Project Client: SISCore DTSS ERP - AI Driven ERP Automation & Predictive Analytics Platform (SIS Group)
I was designed & developed **AI/ML-driven backend solutions** for the SISCore DTSS ERP System for SIS Group Enterprises at Mobile Programming LLC by transforming traditional ERP workflows into intelligent, analytics-wdriven enterprise systems. I was Worked as an MLOps Engineer to build scalable REST APIs, machine learning pipelines, NLP/OCR automation, and predictive analytics capabilities integrated with core ERP modules such as Sales & Accounting, Purchases, & Inventory Management. Developed cloud-native and containerized AI services using Docker, Kubernetes (AKS), and CI/CD pipelines to enable scalable deployment and automated delivery of enterprise AI solutions.

Key responsibilities:

- Developed scalable **REST APIs and backend services** for ERP modules.
- Implemented ML models for sales forecasting, payment prediction, and inventory optimization using XGBoost, Random Forest, and Scikit-learn.
- Built **NLP & OCR pipelines** for automated invoice and document processing.
- Developed semantic search solutions using FAISS vector databases.
- Containerized **ML services using Docker** and deployed on Kubernetes (AKS).
- Implemented CI/CD pipelines and collaborated with cross-functional teams for scalable AI-ready deployments.
- Designed and managed AI/ML cloud infrastructure using Azure Machine Learning, Azure Cognitive Services (OCR/Form Recognizer), Azure Kubernetes Service (AKS), Azure DevOps, Azure Container Registry (ACR), and Azure Blob Storage to enable scalable deployment, intelligent document processing, model training, and automated CI/CD delivery for AI-driven ERP solutions.

Technologies Used
Python, FastAPI/Flask, REST APIs, Scikit-learn, XGBoost, Pandas, spaCy, NLTK, OCR, FAISS, Docker, Kubernetes (AKS), Azure Cloud, CI/CD, Git/GitHub, Azure DevOps, SQL, Azure Machine Learning, Azure Cognitive Services (OCR/Form Recognizer), Azure AKS, Azure DevOps, Azure Container Registry (ACR), Azure Blob Storage.

Job Role 3 - iAapTeck Software Labs (AI ML Engineer)

15 Dec. 2020 – 30 Oct. 2023 (2.10 Years of Experience)

Project Client 1: BolBhidu CPRS Digital Solution - AI Driven Content Personalization & Recommendations Platform
I was designed & developed AI-driven backend systems and recommendation platforms focused on user behavior analytics, content personalization, and scalable ML deployment for BolBhidu Digital Solution. Built recommendation engines, Flask-based ML APIs, behavioral analytics solutions, and MLOps pipelines for high-traffic digital engagement platforms using Azure AI/ML services.

Key Role responsibilities:

- Developed recommendation systems using Collaborative Filtering, K-Means, and DBSCAN algorithms for personalized content delivery.
- Built ML models using Python, Scikit-learn, and Pandas for user behavior analysis and engagement optimization.
- Developed scalable FastAPI (REST APIs) for real-time ML predictions with low-latency processing.
- Utilized Azure Machine Learning, AKS, Azure DevOps, and Azure Container Registry (ACR) for scalable ML deployment and MLOps workflows.
- Containerized ML applications using Docker and implemented CI/CD pipelines with monitoring and model versioning.
- Designed A/B testing and analytics pipelines to improve recommendation performance and customer retention.

Technologies Used:
Python, FastApi, Scikit-learn, Pandas, NumPy, SQL, Collaborative Filtering, K-Means, DBSCAN, Azure Machine Learning, AKS, Azure DevOps, Azure Container Registry (ACR), Docker, CI/CD, Git/GitHub, REST APIs, MLOps, Behavioral Analytics, A/B Testing.

Project Client 2: Kidebaj AI-SRP Smart Retail Platform (Marathi Kida Creative Media LLC)
I was designed & developed an **AI-powered e-commerce platform** for Kidebaj, focused on intelligent product recommendations, smart search, customer engagement automation, inventory forecasting, and AI-driven marketing optimization. I built scalable backend services and ML-powered systems to enhance customer shopping experiences, personalize product discovery, and improve operational efficiency for the Marathi cultural merchandise platform.

Role & responsibilities:

- Developed AI-based recommendation systems using Collaborative Filtering and customer behavior analytics for personalized product suggestions.
- Built intelligent NLP-based search & semantic matching solutions for enhanced product discovery views.
- Integrated Azure Cognitive Services & Azure AI Vision for intelligent image analysis, product tagging, and AI-powered customer engagement capabilities.
- Designed AI-driven chatbot workflows and automated customer engagement solutions using Azure AI Services concepts.
- Implemented inventory forecasting & demand prediction models using Scikit-learn, Pandas, Azure ML
- Developed marketing analytics and behavioral tracking systems to improve customer retention and campaign optimization.
- Built scalable REST APIs and backend services for AI/ML integrations with low-latency processing.
- Utilized Azure Machine Learning, Azure Kubernetes Service (AKS), Azure DevOps, and Azure Container Registry (ACR) for scalable MLOps deployment workflows.
- Containerized AI services using Docker and implemented CI/CD automation pipelines for production deployments.

Technologies Usage:
Python, Flask, Scikit-learn, Pandas, NLP, Recommendation Systems, Collaborative Filtering, Semantic Search, SQL, REST APIs, Docker, CI/CD, Git/GitHub, Behavioral Analytics, AI Chatbots, Inventory Forecasting, Marketing Analytics.

Job Role 4 - Capgemini India (Senior AI/ML Analyst)

18 April 2019-11 Oct. 2020 (1.7 Years of Experience)

Project Client: Equinor PAIDPS Portal - AI Driven Predictive Analytics & Intelligent Document Processing System (Equinor Statoil Global Operations)
I was designed, implemented & developed AI/ML-driven data processing and predictive analytics solutions for global enterprise operations at Canon and Equinor Statoil. Worked on intelligent automation systems focused on predictive maintenance, document digitization, OCR automation, and scalable ML deployment to optimize operational efficiency, reduce manual processes, and enable data-driven decision-making.

Key responsibilities:

- Developed machine learning and time-series forecasting models for predictive maintenance and operational analytics.
- Built OCR and CNN-based deep learning solutions for intelligent document extraction and automation.
- Processed and transformed large ERP and CRM datasets for ML model training and analytics workflows.
- Assisted in deploying ML models using Docker and Kubernetes in scalable production environments.
- Monitored system and model performance using Dynatrace and Datadog tools.
- Collaborated with cross-functional teams to improve automation, operational efficiency, and enterprise data processing systems.
- Contributed to the AI-driven predictive maintenance project by developing forecasting pipelines and analytics models to optimize equipment lifecycle management and reduce operational downtime.
- Worked on the intelligent document automation project by implementing OCR, deep learning-based extraction systems for processing invoices, operational reports, and enterprise business documents.
- Supported the enterprise MLOps deployment project by containerizing ML applications using Docker and assisting Kubernetes-based deployments with monitoring through Dynatrace & Datadog for scalable production environments.

Technologies Skills: Python, Scikit-learn, Pandas, CNN, OCR, Time-Series Forecasting, Docker, Kubernetes, Dynatrace, Datadog, ERP/CRM Data Processing, Machine Learning, Deep Learning, Predictive Analytics.