

Dir. DDIT Dev. Data, Analyt, DS&AI (AI Architect)

Job ID

REQ-10038858

Feb 26, 2025

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Summary

We are seeking a highly skilled AI Architect to design and implement cutting-edge Generative AI (GenAI) solutions tailored for the pharmaceutical and life sciences industry. This role will be responsible for defining AI strategies, selecting and fine-tuning generative AI models, and ensuring seamless integration with enterprise systems to enhance drug discovery, clinical trials, regulatory compliance, and patient-centric solutions. The AI/GenAI Architect will collaborate closely with data scientists, engineers, and business stakeholders to develop scalable, compliant, and high-performance AI applications that leverage large language models (LLMs), multimodal AI, and AI-driven automation.

About the Role

Key Responsibilities

- **GenAI Strategy & Roadmap:** Define and implement a generative AI architecture and roadmap aligned with business goals in pharma and life sciences.
- **Solution Design:** Architect scalable GenAI solutions for drug discovery, medical writing automation, clinical trials, regulatory submissions, and real-world evidence generation.
- **LLM Development & Optimization:** Work with data scientists and ML engineers to develop, fine-tune, and optimize large language models (LLMs) for life sciences applications, such as scientific literature analysis, regulatory intelligence, and patient engagement.
- **Cloud & On-Prem AI Infrastructure:** Design GenAI solutions leveraging cloud platforms (AWS, Azure, GCP) or on-premise infrastructure while ensuring data security and regulatory compliance.
- **MLOps & Deployment:** Implement best practices for GenAI model deployment, monitoring, and lifecycle management within **GxP-compliant** environments.
- **Compliance & Governance:** Ensure GenAI solutions comply with **regulatory standards (FDA, EMA, GDPR, HIPAA, GxP, 21 CFR Part 11)** and adhere to responsible AI principles, including bias mitigation and explainability.
- **Performance Optimization:** Drive efficiency in generative AI models, ensuring cost optimization and scalability while maintaining data integrity and compliance.
- **Stakeholder Collaboration:** Work with cross-functional teams, including platform teams, and Drug Development teams, to align GenAI initiatives with enterprise and industry-specific requirements.
- **Research & Innovation:** Stay updated with the latest advancements in **GenAI, multimodal AI, AI agents, and synthetic data generation** to incorporate emerging technologies into the company's AI strategy.

Required Qualifications

- Bachelor's or Master's degree in Computer Science, AI, Data Science, Bioinformatics, or a related field.

- **Experience:** 8+ years in AI/ML development with at least 2 years in an AI Architect or GenAI Architect role in pharma, biotech, or life sciences.
- **Technical Expertise:**
 - Strong proficiency in **Generative AI, large language models (LLMs), multimodal AI, and deep learning** for pharma applications.
 - Hands-on experience with AI/ML frameworks (TensorFlow, PyTorch, Hugging Face, LangChain, Scikit-learn, etc.).
 - Experience with data engineering, ETL pipelines, and big data technologies (Spark, Kafka, Databricks, etc.).
 - Proficiency in programming languages such as Python, R, or Java.
 - Knowledge of cloud AI services (AWS Bedrock, Azure OpenAI, Google Vertex AI).
 - Deploy a Lightweight LLM in a Pharma SaaS Platform
- **MLOps & DevOps:** Familiarity with CI/CD, containerization (Docker, Kubernetes), vector databases, and real-time model monitoring.
- **Regulatory & Ethical AI:** Understanding of AI governance, responsible AI principles, and compliance requirements for GenAI in pharma.
- **Problem-Solving:** Strong analytical and problem-solving skills with the ability to design innovative GenAI solutions for life sciences use cases.
- **Communication & Leadership:** Excellent communication skills to articulate GenAI strategies and solutions to technical and non-technical stakeholders.

Preferred Qualifications

- Experience in **GenAI applications for medical writing, automated clinical trial protocols, drug discovery, and regulatory intelligence.**
- Knowledge of **AI explainability, retrieval-augmented generation (RAG), knowledge graphs, and synthetic data generation** in life sciences.
- AI/ML certifications from AWS, Google, or Microsoft.
- Understanding of **biomedical ontologies, semantic AI models, and federated learning.**
- Exposure to fine-tuning the LLM models will be a big plus
- Exposure to SLM or domain LLM model will be a big plus
- **BioGPT & PubMedBERT:** NLP for biomedical literature and clinical trial analysis
- **Custom SLMs:** Fine-tune **Mistral 7B, Phi-2, or Gemma** on pharma datasets

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Novartis is committed to building an outstanding, inclusive work environment and diverse teams' representative of the patients and communities we serve.

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Why Novartis: Helping people with disease and their families takes more than innovative science. It takes a community of smart, passionate people like you. Collaborating, supporting and inspiring each other. Combining to achieve breakthroughs that change patients' lives. Ready to create a brighter future together?
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IN10 (FCRS = IN010) Novartis Healthcare Private Limited

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Data and Digital

Job Type

Full time

Employment Type

Regular

Shift Work

No

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