

Alex Bates *Full Stack AI Engineer*

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Senior Full Stack AI Engineer driving enterprise AI solutions. Leads design and delivery of Generative AI platforms, including large-scale Retrieval-Augmented Generation systems that improve response accuracy and reduce hallucinations for financial services clients. Built scalable AI orchestration services with Python, FastAPI, and Java, deploying cloud-native solutions on Azure, AWS, and GCP. Seeking to leverage deep AI and full-stack expertise to accelerate intelligent automation and business productivity

Skills

AI / Generative AI — OpenAI, Azure OpenAI, Azure AI Search, AWS Bedrock, Vertex AI, Gemini, LangChain, LangGraph, AutoGen, CrewAI, MCP, RAG, Prompt Engineering, Context Engineering, AI Agents, Semantic Search, Vector Search, Pinecone, Vector Databases, AI Observability, MLflow, Databricks, Dagster, dbt

Frontend — React, Next.js, Angular, TypeScript, JavaScript, TanStack Query, Tailwind CSS

Backend — Python, FastAPI, Java, Spring Boot, C#, ASP.NET Core, Node.js

Databases — SQL, NoSQL, PostgreSQL, MySQL, MongoDB, Redis, DynamoDB, Pinecone, SQL Server

Cloud & DevOps — Azure, AWS, GCP, Docker, Kubernetes, Terraform, Git, GitHub, Jenkins, CI/CD, Prometheus, Apache Airflow

Professional Experience

Software Engineer, Synechron

11/2023 – Present | New York, NY

- Led the design and delivery of enterprise Generative AI solutions using Azure OpenAI, Azure AI Search, AWS Bedrock, Vertex AI, and Gemini, enabling intelligent document search, conversational AI, and knowledge assistants for financial services clients
- Architected and implemented large-scale Retrieval-Augmented Generation (RAG) platforms by integrating Azure AI Search, vector databases, semantic search, hybrid retrieval, and enterprise document repositories, significantly improving response accuracy and reducing hallucinations
- Designed and optimized Azure AI Search indexes for millions of unstructured documents, leveraging vector and keyword search, semantic ranking, and relevance tuning, which increased relevance of LLM responses and reduced query latency
- Developed scalable AI orchestration services with Python, FastAPI, and Java, creating RESTful APIs that coordinate document retrieval, search pipelines, embedding services, and LLM inference, resulting in more reliable end-to-end AI workflows
- Built and deployed intelligent AI agents using LangGraph, AutoGen, CrewAI, and Model Context Protocol (MCP) integrations, automating document processing, knowledge extraction, and business workflows
- Developed modern AI-powered applications using React, TypeScript, TanStack Query, Tailwind CSS, and Angular, delivering intuitive user experiences for enterprise search and Generative AI platforms
- Designed robust data and AI pipelines using Dagster, dbt, Databricks, and MLflow, improving data processing efficiency, model lifecycle management, data lineage, and governance
- Implemented cloud-native deployment architectures using Docker, Kubernetes, Terraform, CI/CD pipelines, Prometheus, and MLflow, ensuring scalability, resiliency, observability, and production reliability for AI applications

Full Stack Engineer, Broadridge

06/2021 – 11/2023 | New York, NY

- Developed enterprise Generative AI applications using React, Python, OpenAI, LangChain, Pinecone, MongoDB, Redis, and vector databases, delivering intelligent search, conversational AI, and knowledge management solutions for internal business users
- Designed and implemented Retrieval-Augmented Generation (RAG) pipelines with context and prompt engineering, embeddings, and vector search, improving answer quality, response relevance, and LLM grounding for internal users
- Built scalable AI services and RESTful APIs using Python and FastAPI, integrating OpenAI models, vector stores, enterprise systems, and AI observability capabilities to monitor retrieval performance, prompt quality, and model responses
- Designed and deployed cloud-native solutions on AWS using Docker, Kubernetes, Terraform, Git, Jenkins, and CI/CD pipelines, enabling reliable, secure, and automated deployments for AI and enterprise applications
- Developed and optimized relational and NoSQL data platforms using MongoDB, Redis, DynamoDB, PostgreSQL, and SQL Server, supporting high-performance AI workloads, caching strategies, and scalable data architectures

Full Stack Developer, AdvancedMD

03/2020 – 05/2021 | South Jordan, UT

- Delivered enterprise web features that increased user engagement by 25% and achieved 99.99% availability for core workflows in a large-scale production environment
- Increased backend throughput and reliability by optimizing transactional workflows and tightening CI/CD release gates, reducing response times by 20% and improving checkout completion rates
- Streamlined multi-team release coordination by standardizing build and deployment pipelines, cutting build failures by 40% and shortening time-to-release
- Collaborated in Scrum/Agile teams to improve system performance by 30% through targeted performance testing, disciplined code reviews, and robust automated test coverage

Software Engineer, Asurion

06/2016 – 02/2020 | Nashville, TN

- Implemented advanced provider search functionality-including language, CME, location, and coverage-using Angular (TypeScript), ASP.NET Core, and caching strategies with Redis, improving data retrieval accuracy and performance
- Refactored 36 VSource lookup models with backend teams using .NET Core, enabling lookup by last name or NPI and improving data consistency across services
- Fixed data and UI issues by adding service calls, improving SQL queries, and updating Angular settings to ensure accurate license filtering and faster user interactions
- Supported over 5,000 users by enhancing AngularJS, Java, and Python applications, using Maven automation and database optimizations to improve usability and system performance

Software Engineer Intern, Asurion

06/2015 – 05/2016 | Nashville, TN

- Utilized Git Bash and GitHub for version control, kept clean commit histories and organized branching, and managed initiatives with GitHub Projects, which streamlined the development workflow and reduced merge conflicts
- Developed C# .NET applications using the MVC pattern, ADO.NET, Entity Framework, and delivered full-stack capstone projects with a C# backend and ReactJS frontend, which provided a functional prototype for client review
- Collaborated with senior engineers in Agile sprints to debug production issues, write unit tests, and improve build reliability using Git and Docker, which reduced failed builds and sped up issue resolution

Education**Bachelor of Science, Computer Science, University of Tennessee**

08/2011 – 05/2015 | Chattanooga, TN

Certificates

MTA: Software Development Fundamentals

Issuer: Microsoft

MTA: Database Fundamentals

Issuer: Microsoft

Databricks Certified Associate Developer for Apache Spark 3.0

Issuer: Databricks Academy