

Pavan Gupta

Solutions Architect AI

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Full-stack Lead AI Developer/Architect with 13+ years of experience specializing in converting ideas into products and building solutions from the ground up for US-based startups. Expertise includes Data Science, Application Development, AI/ML Ops and Project Management.

Proven track record over the last 7+ years in leading design and development of MVPs and production-ready systems, delivering AI-enabled, data-driven products in fast-paced environments.

Leading the development of an Enterprise-RAG platform utilizing llamaindex, Information-Retrieval workflow which leverages OpenAI-ChatGPT & Langchain on AWS cloud for market research product.

Key Skills

Core Skills: Python, AI, AWS, Architecture, Web Development, Agile.

Domains: Financial Systems - BFSI, Ed tech, Telecom

Generative AI: RAG, LLM, ChatGPT, Langchain, Llamaindex, Ollama, Prompt Engineering, Conversational AI using Chatbot.

New Skills: AI Agents (Agentic RAG), Langgraph, Responsible AI.

Tools / Frameworks: Natural language processing – NLP, scikit-learn (sklearn), Gensim, Pandas, FastAPI, Django, Flask, Postgres, Elastic Search, SQLAlchemy, Jenkins, Docker, Ansible.

Concepts: LLM, Information retrieval, ML Ops, AI Ops, Agile, Serverless, Microservices, RestAPIs, System Design, API Design, Async Processing, Event Driven Design, Database Design, ETL, Data Migration, Data Pipeline.

AWS Cloud Services: Sagemaker, Bedrock, Lambda, API Gateway, DynamoDB (NoSQL DB), QuickSight (BI tool), S3 (DataLake), Redshift, SNS, SQS (queue), Cloud Watch (Logging and monitoring), ECS, EKS (Kubernetes), Cognito, AuroraDB RDS.

Management: Architecture, Team Leader, Sprint Planning, Product Management, Delivery Management, Project Management.

Professional Experience

Company: GSLab, Pune

Duration: July-2015 to Present (9 years)

Role: Solutions Architect AI

Product-1: Opportunities

Skills: Information Retrieval, RAG, Langchain, Chat GPT (LLM), FastAPI.

AWS Services: Sagemaker, S3, SQS, SNS, ECS, Lambda, Dynamo-Db, Opensearch, Quicksight.

Application for finding business leads (needle in haystack) from company filings, reports, announcements, news feeds and user uploaded pdf files

- **Data Load Pipeline:** Designed and developed pipeline to process unstructured data from multiple sources in real time with guaranteed processing using queue service. Implemented End to end monitoring of files and documents via live dashboard.
 - **Data Preprocessing Pipeline:** Productionizing the Data Science ingestion code from multi step NLP pipeline to extract, clean, preprocess, vectorization (embeddings) the text data from pdf files.
 - **Retrieval Pipeline:** High-performance retrieval service to run real-time and scheduled searches. Volume: 10,000 searches on up to 1000 documents per company for Fortune-500 companies on a daily basis to capture business enablement opportunities from daily news feeds.
 - Productionize logic of hybrid search (Semantic + Keywords) for better precision.
 - Successful implementation of product resulted in converting MVP into an enterprise product with onboarding of 7 Fortune-1000 companies as licensed customers of this platform.
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Role: Lead Data Scientist

Product-2: Illuminate

Skills: Python, scikit-learn, Data Mining, Data Preprocessing, ETL, Data Lake, Data Pipeline, Dashboard Embedding, Data warehousing.

AWS Services: Lambda, Dynamo-Db, S3, Aurora-Db, SQS, Redshift, QuickSight.

Illuminate provides a single account financial view to highlight actual to plan performance based on estimated account spend with five year forward and backward views.

- Analyzed business requirement related to company's financial data, identify suitable APIs on Thomson- Reuters, process, save and publish data on web application.
 - LEI Integration for company information and ownership hierarchy.
 - Productionized web-embeddable dashboards using AWS QuickSight and Redshift to display account insights.
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Role: Manager Engineering

Product-3: Enterprise B2B SaaS Platform

Skills: Python, FastAPI, AWS, Agile, Serverless, Delivery Management, Project Management, Elastic Search, Postgres.

AWS Services: Cognito, Lambda, API Gateway, DynamoDB, EKS, S3, EC-2, SQS, SNS, Quicksight.

Go to customer B2B Enterprise SaaS platform. Utilizing AWS Serverless and Python, React stack.

Account360: Go to customer platform for B2B organizations to protect, retain, and grow large accounts.

- **Project Management:** Led design and implementation of Enterprise B2B SaaS platform from scratch, leveraging AWS - Serverless architecture and EKS for scalability.
 - **Strategy and Decision Making:** Drove strategic and tactical decision-making in technology, processes, and team management, for improving efficiency and output.
 - **Architecture and Design:** Defined scalable architecture, API specs, database design, standard guidelines, and tracked deliverable progress.
 - **Process Optimization:** Identified and addressed knowledge, tool, and process gaps to ensure highest quality and on-time delivery.
 - **Team Building:** Built high-performing teams and contributed to core backend components, resulting in project success.
 - Successful product implementation resulted in converting MVP into an enterprise product, onboarding 7 Fortune companies as licensed customers.
 - Grown client account size to 4X in 3 years, generating an additional \$1 million in annual revenue.
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Role: Lead Engineer - AI

Product: Product Recommendation engine for digital content platform.

Skills: MLE, NLP, Pandas, Scikit-learn, Gensim, Python, Django, Elastic Search.

- **Summary Generation:** Developed a multi-step NLP pipeline to extract, clean, preprocess, and generate content summaries, increasing product visibility in user searches by 70%.
 - **Document Tagging:** Created an NLP-based tags detection algorithm, significantly boosting document visibility.
 - **Product Recommendation:** Implemented a recommendation engine using user and product data matching
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Role: Lead Backend Engineer - Python

Product: Digital Content e-commerce platform

Skills: Python, Django, DRF, Elastic Search, Redis, Celery, RabbitMQ, MySQL, REST-API, Pytest, A/B Testing, Payment Gateway Integration, Redshift.

Developed a digital content platform, and integrated Payment gateways for a US based Edtech startup. used by ~90 million users and ~1 million weekly active users.

- **Product Lifecycle:** Implemented REST APIs for product lifecycle including media content upload.
 - **Moderation workflow:** Designed and implemented content moderation flow for product review before publishing.
 - **Payment Gateway Integration:** Integrated PayPal and Stripe payment gateways.
 - **Logging and Monitoring:** Implemented logging and monitoring framework for end-to-end product life cycle, moderation, and payments.
 - **Reporting:** Developed user activity tracking framework and product consumption reports for stakeholders.
 - **Database Design:**
 - **A/B Tests:** Collaborated with Product Management to implement data-driven feature strategy using A/B tests.
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Role: Senior Software Engineer

Product: Aerospike (NoSQL Database).

Skills: Python, Aerospike, Pytest, Docker, Jenkins, Ansible.

- Implemented Jenkins based CI/CD pipeline for NoSQL database connectors builds.
 - Engineered dockerfiles to test NoSQL DB connector libraries against various OS and programming language versions e.g.
https://github.com/PavanGupta01/devops/blob/master/docker/aerospike/c16_py_core
 - Contributed to the backend for a web-based cluster monitoring system for NoSQL DB.
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Company: Synerzip (now Excellerate), Pune

Role: Senior Software engineer

Duration: July-2013 to June-2015 (2 Years)

Role: Senior Software Engineer (2 Years)

Product-1: QuickOffice (Google product)

Skills: Django, Python, DevOps, Jenkins, CI/CD, Docker, Ansible.

QuickOffice is Google's product that allows users to edit Word, Excel, and presentation files offline in Chrome.

- Set up CI pipeline with Bamboo, Jenkins, Ansible, and Docker, reducing build shipping time by 40%.
- Developed and maintained test automation frameworks.
- Engineered a web-based tool to automate build testing.

Company: Amdocs, Pune

Role: Subject Matter Expert (SME)

Duration: July-2011 to June-2013 (2 years)

Product: E-Commerce Platform (used by ~50 mn users)

Skills: Python, Selenium, Test automation, Test execution, Manual testing.

- Designed test automation framework and end-to-end scenarios, reducing manual testing efforts by 70%.
- Developed QC and JIRA synchronization tools, saving ~30 hours of monthly manpower.
- Clustered and identified requirements from SRS documents.
- Prepared and executed test plans based on software requirements.

Education

RIT / Masters in Computer Applications (MCA)

Jul 2008 - Jun 2011, Indore

MCRPV / Bachelors of Computer Applications (BCA)

Jul 2005 - Jun 2008, Rajgarh

Certifications and Award

- **GitHub Copilot: The AI Pair Programmer for Coding - Coursera Specialization**
Delve deeply into the artificial intelligence technologies that drive GitHub Copilot.
- **Generative AI for Everyone - Coursera Specialization**
AI Fundamentals and Applications in Daily Life
- **Achiever of the Year (2020 - 21) - GSLab**
Prestigious yearly award for values and excellence in terms of achieving client appreciation, technical contribution, and building an ethical culture at work.
- **Aerospike Developer And Administration - AerospikeDB**

Open-Source Contribution

Product: Aerospike-Admin (Distributed NoSQL DB)

- <https://github.com/aerospike/aerospike-admin/commits?author=PavanGupta01>
- <https://github.com/aerospike/aerospike-admin/pull/25/files>

Aerospike Admin provides an interface for Aerospike users to view the stat of their Aerospike Cluster by fetching information from a running cluster.

Interests

Badminton, Personal finance.