Prashil Bulbule

AI Engineer | Machine Learning Engineer | Staff Software Engineer

Established technical leader with experience in designing, building, and scaling software and data systems in fast-paced enterprise environments, with a strong focus on Agentic AI, Generative AI, and Machine Learning frameworks, particularly within the healthcare domain. Expertise in building real-time data pipelines, developing AI-powered solutions, and ensuring HIPAA compliance and factual reliability in a fast-paced environment

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EXPERIENCE

Exact Sciences, San Francisco Bay Area – *AI/ML Engineer*
Aug 2021 - PRESENT

- Architected and deployed **AURA AI**, a Retrieval-Augmented Generation (**RAG**) system using **LangChain, OpenAI API, and Pinecone** for internal Q&A. Improved answer accuracy by 16% and reduced latency by 72%, enabling faster, more reliable enterprise information retrieval.
- **Designed and implemented multi-agent frameworks using LangGraph and AutoGen** to automate complex clinical data workflows, increasing reporting efficiency by 40% and ensuring HIPAA compliance.
- **Developed Conversational AI agents leveraging transformer-based LLMs and RAG** pipelines to automate drug trial literature reviews and clinical documentation. Integrated LangChain with FastAPI microservices for modular deployment and human-in-the-loop validation.
- Built multi-modal summarization pipelines for the "**SuperPod**" project, combining Whisper ASR, Transformers, and RAG architectures to analyze and summarize multilingual medical podcasts, generating trustworthy summaries for clinicians.
- Engineered human-in-the-loop (HITL) diagnostic validation systems with >95% accuracy, incorporating bias detection, LLM feedback loops, and guardrails (RAGAS, hallucination prevention) to enhance factual reliability.
- Developed AI-powered solutions to automate complex clinical data workflows, improve drug trial literature reviews, and enhance diagnostic validation systems, ensuring HIPAA compliance and factual reliability in a fast-paced healthcare environment

Genomic Health, San Francisco Bay Area – *Technical Consultant, Machine Learning*
Aug 2015 - Aug 2021

- Developed and deployed a **machine learning** model to predict the risk of patient readmission within 30 days, using electronic health record (EHR) data. This model achieved 90% accuracy and helped clinical staff proactively identify and intervene with high-risk patients
- Built a deep learning model to automatically detect and classify abnormalities in medical images (e.g., X-rays or MRIs). The model improved the efficiency of diagnostic workflows by 35% and helped radiologists prioritize critical cases.
- Led end-to-end SAP ERP implementations (CPI-DS, IBP, BTP, SAP Builds, CPI, Datasphere, BW) to modernize enterprise architecture, Digital Transformation, S4 upgrade, and enable data flow, integration, and reporting across business functions.
- Implemented and customized NetSuite ERP and Salesforce (APEX) solutions using SuiteScript, SuiteFlow, SuiteAnalytics, and JavaScript, ensuring smooth interoperability and optimized business process automation.

Laird (*Acq. by Happiest Minds*), India – *Lead Architect/Technical Manager*
Sept 2012 - May 2015

- Architected and delivered enterprise-grade web and cloud applications using the Microsoft and SFDC ecosystems. Led and directed a high-performing team of developers and analysts to implement .NET and SharePoint-based business platforms, optimizing system efficiency and accelerating digital transformation initiatives and Sharepoint Business applications and managing a team of developers and business analysts.

PREVIOUS WORK EXPERIENCE

Iron Mountain, India – *Technical Architect* Jul 2011 - Sep 2012

Winwire Technologies, India – *Senior Developer* Aug 2008 - Jul 2011

EDUCATION

SSCET, India – *Bachelor's Degree in Information Technology*
Mar 2001 - July 2005

SKILLS

Agentic AI
LangGraph, LangSmith, n8n, CrewAI, AutoGen, OpenAI Agents SDK, DSPy, Agent Orchestration, MCP

Generative AI & RAG
Fine-Tuning, PEFT, LORA, QLORA, Transformers, PyTorch, Multimodal AI, Prompting Techniques: Advanced Prompting, Chain-of-Thought (CoT), Tree-of-Thought (ToT), Evaluation & Guardrails: LLM Evaluation, Deepchecks, RAGAS, Arize Phoenix, Guardrails, Hallucination Prevention, Bias Detection

Platforms & Cloud
Cloud Services: AWS (SageMaker, EKS, EC2, S3, Lambda), Azure (AKS), Vertex AI, Data & Orchestration: Apache Airflow, PostgreSQL, FastAPI, Flask, Docker, Kubernetes, Vector Databases: Pinecone, Weaviate, FAISS, Chroma

Complementary Skillset
Programming & Scripting: Python, .NET (C#), Appian, ABAP, JavaScript, HTML, CSS, XML, APEX, ERP & Enterprise Systems: SAP, NetSuite, Salesforce, Coupa.

DevOps & CI/CD
Docker, Kubernetes, Git, CI/CD pipelines, REST APIs, PySpark

AWARDS/Certifications
–**CDAC– Center for Development of Advance Computing,** *Post-Graduation Diploma*
–NetSuite Certified SuiteCloud Developer II,
–NetSuite Certified SuiteCloud Developer I, Salesforce developer, Salesforce administrator, MCTS: Microsoft -SharePoint 2010, Configuring
–MCTS: Microsoft SharePoint 2010, Application Development
–MCTS Designing and Developing Microsoft SharePoint 2010 Applications
–MCTS: Microsoft Office SharePoint Server 2007, Configuration
–MCTS: Microsoft Office SharePoint Server 2007, Application Development
–MCTS: SQL SERVER 2005 Business Intelligence–Implementation and Maintenance

PROJECTS

- [ ] Leadership Dashboard
- [x] ~~Talk2myinbox~~
- [ ] Dailyjournal
- [x] ~~Mcpwithgoogle~~
- [x] ~~Linkedin Automations~~
- [x] ~~LLM finetuning~~