

Preeti Boddeti
Applied AI Engineer
Google Cloud Solutions Architect

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Professional Summary

AI Engineer / Applied AI Developer with strong hands-on experience in building **GenAI-powered applications, cloud-native systems, and rapid proof-of-concepts** using Python and modern AI frameworks. Proven ability to design and deliver **LLM-driven solutions**, including conversational agents, metadata intelligence systems, and chat-based automation platforms, leveraging models from OpenAI, Google (Gemini/Vertex AI), and Hugging Face.

Experienced in **prompt engineering, function calling, and retrieval-augmented generation (RAG)** to build intelligent systems that process both structured and unstructured data. Strong background in developing **Python-based backend services using Fast API**, integrating APIs, and rapidly prototyping AI solutions in fast-paced, research-driven environments.

- AI Engineer with strong hands-on experience building **GenAI-powered applications, LLM integrations, and cloud-native systems** on Google Cloud Platform.
- Proficient in Python with the ability to rapidly develop **AI proof-of-concepts (POCs)** and scalable backend services using Fast API.
- Experienced in designing and implementing **LLM-driven solutions** using models from OpenAI, Google (Gemini/Vertex AI), and Hugging Face.
- Strong expertise in **prompt engineering, function calling, and structured output parsing** for reliable AI system behavior.
- Built **agentic AI systems and conversational assistants** for infrastructure provisioning, data discovery, and enterprise automation.
- Implemented **Retrieval-Augmented Generation (RAG)** pipelines integrating LLMs with structured data sources like Big Query.
- Developed **GenAI metadata intelligence platforms** enabling automated documentation, semantic search, and natural language querying.
- Experienced in handling **structured and unstructured data** for AI applications, including embeddings and semantic retrieval.

- Designed and deployed **AI-powered chat-based interfaces** integrated with backend orchestration services.
- Built **cloud-native ETL pipelines and data platforms** using Big Query, Cloud Storage, and data governance tools.
- Implemented **data security and masking solutions** using Cloud DLP for sensitive data protection in AI workflows.
- Architected and deployed scalable applications using **GCP services** including Cloud Run, Compute Engine, App Engine, and Vertex AI.
- Developed **real-time and asynchronous AI inference systems** with optimized performance and scalability.
- Built **infrastructure automation platforms** using Terraform, Workload Identity Federation (WIF), and OIDC with AI-assisted workflows.
- Integrated **CI/CD pipelines and Git-based workflows** for continuous deployment and collaborative development.
- Developed **full-stack AI applications** combining React.js frontends with Python-based AI backends.
- Strong analytical, problem-solving, and critical thinking skills with experience working in **fast-paced, research-driven environments**.
- Collaborated with cross-functional teams to translate business requirements into **scalable AI, cloud, and data solutions**.

Tools and Technology Skills

Languages: Python, JavaScript (ES6+), TypeScript, Java

AI / LLM & GenAI: LLMs, Prompt Engineering, Function Calling, RAG (Retrieval-Augmented Generation), AI Agents, Tokenization, Embeddings, OpenAI, Gemini (Vertex AI), Hugging Face Transformers

Frontend: React.js, Redux, Angular, HTML5, CSS3, Bootstrap, Prime React, Prime NG

Backend: Fast API, Node.js, Express.js, REST APIs, Microservices Architecture

Cloud Platforms: Google Cloud Platform (GCP), AWS

GCP Services: Big Query, Vertex AI, Cloud Run, Compute Engine, Cloud Functions, Cloud Storage, IAM, VPC

Data Engineering & Analytics: Big Query, Data Warehousing, Data Lakes, Lakehouse Architecture, Apache Iceberg, Big Data Processing

DevOps & CI/CD: Docker, GitHub Actions, Jenkins, Azure DevOps, Linux

Infrastructure as Code: Terraform, Workload Identity Federation (WIF), OIDC

Databases: PostgreSQL, MySQL, SQL Server, SQL, PL/SQL

Security & Auth: OAuth 2.0, JWT, RBAC, IAM, SSO, Passport.js

API & Integration: Open API (Swagger), Postman, API Integration, Microsoft Graph Explorer

Version Control: Git, GitHub, GitLab, Google Source Repositories

Servers & Runtime: Node.js, Apache Tomcat

Operating Systems: Linux, Ubuntu, macOS, Windows

Tools & IDEs: VS Code, IntelliJ, WebStorm, Cursor

Design & UI: Figma, Adobe XD, Adobe Express

Methodologies: Agile, Scrum, JIRA, Rally

Education

Undergraduate in Computer Science

Gayatri Vidya Parishad University

June 2014 - April 2018

Certifications

Google Cloud Certified Associate Engineer

[Credentials Link](#) | July 2024 - July 2027

Google Cloud Professional Cloud Architect

[Credentials Link](#) | July 2025 – July 2027

Projects & Work Experience

Ford Motor Company, Inc - Michigan Central

Applied AI Engineer | Jan 2025 – Present

Description:

Engineered a cloud-native data platform on Google Cloud for large-scale data ingestion, governance, and intelligent metadata management. Developed a GenAI-powered metadata intelligence system leveraging LLMs to enable semantic data discovery, automated documentation, and conversational analytics over Big Query landing zones.

Responsibilities:

- Designed and implemented scalable ETL pipelines to ingest structured and semi-structured data into Big Query landing zones with optimized partitioning and clustering strategies.
- Automated cross-project data ingestion and transfer workflows using Cloud Storage and Storage Transfer Service for centralized raw data management.
- Implemented data masking, PII detection, and de-identification using Cloud DLP APIs to ensure compliance with data security standards.

- Configured dataset-level governance including IAM roles, authorized views, and retention policies for secure and controlled data access.
- Developed a GenAI-powered metadata agent using LLM APIs (OpenAI/Gemini) to auto-generate dataset, table, and column-level descriptions.
- Built semantic search capabilities using embedding-based retrieval techniques for natural language-driven data discovery.
- Implemented Retrieval-Augmented Generation (RAG) architecture to ground LLM responses with Big Query metadata and schema context.
- Designed prompt engineering strategies and context pipelines to improve accuracy, relevance, and consistency of AI-generated responses.
- Integrated Vertex AI services for scalable LLM orchestration, model interaction, and inference optimization.
- Developed backend services using Fast API to orchestrate communication between Big Query, DLP, and AI services with efficient API handling.
- Built a React.js-based interactive dashboard for dataset exploration, metadata visualization, and chat-based conversational querying.
- Enabled conversational analytics by integrating LLMs with structured data systems, allowing users to query datasets using natural language.
- Implemented caching and performance optimization strategies for metadata retrieval and AI response latency reduction.
- Collaborated in Agile environments with version control using Git, code reviews, and CI/CD integration for continuous deployment.

Environment:

Big Query, Cloud Storage, Cloud DLP, Storage Transfer Service, Vertex AI, OpenAI/Gemini APIs, Fast API, React.js, Python, REST APIs, IAM, Git, CI/CD, Agile Scrum

Niterra, Inc

Cloud/AI Engineer | Dec 2023 – Dec 2024

Description:

Designed and delivered a cloud-native platform on Google Cloud enabling automated infrastructure provisioning, secure hybrid cloud migration, and GenAI-powered self-service infrastructure automation. Combined Terraform-based IaC, Workload Identity Federation, CI/CD pipelines, and LLM-based conversational automation to streamline cloud operations and enterprise VMware-to-GCP migration.

Responsibilities

- Developed reusable Terraform modules for provisioning GCP services including VPC, Cloud Run, Cloud SQL, and IAM.

- Implemented Workload Identity Federation (WIF) with OIDC for secure, keyless GitHub Actions authentication to GCP.
- Built Python/Fast API backend services to orchestrate Terraform plan/apply workflows for automated provisioning.
- Designed a GenAI conversational assistant using LLM APIs to convert natural language into Terraform configurations.
- Implemented prompt engineering and structured output parsing for reliable infrastructure code generation.
- Built validation and guardrails to enforce cloud best practices, compliance, and safe provisioning.
- Designed a chat-based self-service platform with GitHub integration, ADC authentication, and conversational workflows.
- Integrated GitHub Actions CI/CD pipelines for automated and version-controlled infrastructure deployments.
- Developed React.js dashboard for provisioning workflows, status tracking, and infrastructure visualization.
- Optimized workflows using caching, reusable templates, and state management improvements.
- Led enterprise VMware-to-GCP migration using Migrate to Virtual Machines (M2VM) with migration wave planning and execution.
- Designed hybrid networking architecture including VPCs, subnets, routing, firewall rules, and DNS configurations.
- Configured HA VPN with BGP for secure and resilient on-prem to GCP connectivity.
- Executed migration of 25–30 VMs including replication, cutover, rollback strategy, and validation.
- Built secure landing zones aligned with GCP best practices for governance, IAM, and network isolation.
- Implemented Cloud Monitoring and Logging dashboards for infrastructure observability and performance tracking.
- Performed post-migration optimization including VM rightsizing, performance tuning, and security hardening.
- Collaborated with cross-functional teams in Agile environments using Git workflows and CI/CD practices.

Environment:

Google Cloud Platform (Compute Engine, VPC, IAM, Cloud Run, Cloud SQL, Cloud Storage, Cloud Logging, Cloud Monitoring), Terraform, Workload Identity Federation (WIF), OIDC, Migrate to Virtual Machines (M2VM), HA VPN, BGP, VMware, GitHub Actions, React.js, Python, Fast API, LLM APIs (OpenAI/Gemini), CI/CD, REST APIs, Git, Agile Scrum

Alter Learning, Inc
Full Stack Software Engineer | Jan 2022 – Oct 2023

Description:

Developed a full stack educational technology platform built with React.js and Node.js, delivering immersive learning experiences using AR/VR-enabled web graphics. The platform supports course enrollment, interactive 3D content rendering, real-time session management, and secure user authentication workflows for online curriculum delivery.

Responsibilities:

- Designed and implemented secure user authentication and authorization using Node.js, Passport.js, OAuth 2.0, and role-based access control mechanisms.
- Built scalable RESTful APIs using Node.js and Express.js to manage user sessions, course enrollment, progress tracking, and content delivery workflows.
- Developed interactive frontend modules using React.js with advanced state management patterns including Hooks (useState, useEffect, useContext, useReducer, useMemo, useCallback) and Redux.
- Implemented Higher Order Components (HOC) and custom hooks to enforce authentication guards and reusable component logic across protected routes.
- Architected optimized React component hierarchies to ensure minimal re-renders and efficient state updates.
- Rendered AR/VR-enabled 3D models using JavaScript WebGL-based libraries within React applications for immersive educational experiences.
- Designed reusable, modular UI components based on Figma design systems, ensuring scalability and consistent UI/UX standards.
- Configured advanced routing strategies using React Router for multi-level navigation, protected routes, and dynamic content rendering.
- Implemented complex reducer logic and managed centralized application state trees for predictable state transitions.
- Integrated frontend services with backend APIs for real-time data exchange and course lifecycle management.
- Utilized PrimeReact UI components to build enterprise-grade form handling systems, dynamic multi-step workflows, pagination, and responsive interfaces.
- Applied performance optimization techniques including memorization, lazy loading, and efficient event handling for improved application responsiveness.
- Collaborated using GitHub workflows including branching strategies, pull requests, merge reviews, and version control best practices in Agile sprint cycles.

Environment:

React.js, Redux, Node.js, Express.js, Passport.js, OAuth 2.0, WebGL, JavaScript (ES6+), HTML5, CSS3, PrimeReact, GitHub, REST APIs.

Tata Consultancy Services (TCS)

Full Stack Software Engineer | June 2018 – Nov 2021

Description:

Developed and delivered enterprise-grade web applications using the Mendix low-code Java platform along with traditional full stack technologies. Designed scalable, high-availability solutions deployed on AWS, implementing automated workflows, user-centric interfaces, and optimized data management. Collaborated in Agile teams with Test-Driven Development (TDD) practices to deliver robust business solutions.

Responsibilities:

- Designed and developed full stack web applications using HTML5, CSS3, JavaScript, React, and Mendix low-code components to deliver responsive and intuitive user interfaces.
- Built and optimized business workflows and UI components using Mendix flows, ensuring seamless data handling and user experience aligned with client requirements.
- Deployed and managed cloud applications on AWS with high availability using EC2, Auto Scaling, Load Balancers, S3, and RDS.
- Configured scalable backend architectures and automated deployment processes across multiple environments to ensure reliable production releases.
- Participated in pair programming and Test-Driven Development (TDD) to maintain high code quality and improve team productivity.
- Collaborated in Agile teams, contributing to sprint planning, daily stand-ups, and iterative delivery of features.
- Ensured adherence to enterprise security and data access standards while managing application integrations and cloud resources.

Environment:

Mendix Low-Code Platform, HTML5, CSS3, JavaScript, React, Amazon Web Services (EC2, S3, RDS, Auto Scaling, Load Balancing), Agile, TDD