

# Pujitha Kallu

Sunnyvale, CA

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## Professional Summary

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Full-stack Software Engineer with 7+ years of experience building production-grade applications across Python backend systems, Flutter web/mobile frontends, cloud infrastructure, and data-driven platforms. Strong hands-on experience with Python, Django-style backend development, REST APIs, PostgreSQL, AWS, Redis-style caching, and Flutter/Dart, with a track record of owning features end-to-end from design through deployment and production support. Experienced in shipping scalable real-time systems, structured state management using BLoC and Provider, integrating AI/LLM capabilities using OpenAI and Google Gemini APIs, and working independently in high-accountability startup-style teams. Comfortable using AI coding tools such as Gemini, Codex, and Claude-style assistants as a core part of development, debugging, prompt iteration, and documentation workflows.

## Technical Skills

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**Languages:** Python, Dart, Java, JavaScript, TypeScript, SQL, C, C++, Kotlin, Swift

**Backend Development:** Django, Django REST Framework, Flask, Spring Boot, REST APIs, Microservices, Authentication, Authorization, RBAC, Session-based Auth, OAuth2, JWT, Multi-tenant SaaS Architecture

**Frontend & Mobile:** Flutter, Flutter Web, React Native, Android (Kotlin), iOS (Swift), UIKit, SwiftUI, Jetpack Compose, BLoC, Provider, Riverpod, Responsive UI, Offline-first architecture

**Real-Time Systems:** WebSockets, Firebase real-time sync, Push Notifications, Background Services, Event-driven architectures

**Databases & Storage:** PostgreSQL, MySQL, SQLite, DynamoDB, MongoDB, Elasticsearch, S3

**Caching & Messaging:** Redis, Kafka (event streaming basics), Pub/Sub systems

**Cloud & DevOps:** AWS (EC2, S3, RDS, DMS), GCP, Docker, Kubernetes, Jenkins, GitHub Actions, Azure DevOps, CI/CD pipelines

**AI / ML / GenAI:** OpenAI API, Google Gemini API, Prompt Engineering, LLM Integration, AI-assisted development, RAG basics, embedding workflows

**Tools:** Git, JIRA, Postman, Firebase, Android Studio, Xcode, Bitbucket, Confluence, Tableau, Power BI

**Concepts:** System Design, Distributed Systems, API Design, Performance Optimization, Scalability, Fault Tolerance, Monitoring, Logging, Agile/Scrum

## Professional Experience

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### Senior Software Engineer

*Frugal Innovation Hub, Santa Clara University*

**Jun 2024 – Present**

*Santa Clara, CA*

- Led development of a bilingual multi-game platform using Flutter and Firebase, delivering a unified product experience across web and mobile with secure authentication, responsive UI flows, and real-time tracking.
- Used Firebase in a web application for authentication, real-time data synchronization, push notifications, and live user progress updates to support a responsive and scalable user experience.
- Designed scalable application architecture with clear separation of presentation, business, and data layers, improving maintainability and enabling faster feature delivery in a small engineering team.

- Implemented structured state management using BLoC and Provider-style patterns, improving code maintainability, scalability, and UI consistency across complex features and asynchronous workflows.
- Built backend services for a multi-tenant SaaS-style system with session-based authentication, tenant-scoped configurations, role-based access control, and secure company-level data isolation.
- Designed REST APIs for user management, branding customization, and admin workflows backed by PostgreSQL, enabling scalable per-tenant customization and secure access patterns.
- Integrated AI/LLM capabilities using Google Gemini and OpenAI APIs to support intelligent content generation and assistant-driven features within the application.
- Used AI coding tools and LLM-assisted workflows to accelerate development, debugging, API design, prompt iteration, and technical documentation, improving developer productivity.
- Implemented real-time data flows and event-driven update patterns for user activity tracking, gameplay state, and progress synchronization, improving responsiveness across clients.
- Built reusable Flutter components and modular UI workflows that reduced duplication and enabled faster iteration across multiple game experiences and user roles.
- Improved application startup and runtime performance by optimizing UI rendering, reducing unnecessary state updates, and profiling memory usage, achieving approximately 25% faster responsiveness.
- Implemented Firebase Authentication, push notifications, crash monitoring, and structured logging to improve production stability and streamline issue detection for live deployments.
- Owned features end-to-end in a startup-style environment, handling design, development, testing, release coordination, and post-production debugging with high accountability.
- Designed modular architecture supporting multiple games with shared services and scalable feature extensions.
- Built tenant-aware data models ensuring strict data isolation and security across organizations.
- Improved API efficiency and reduced latency through optimized queries and caching strategies.
- Implemented analytics and tracking systems to monitor engagement and improve user experience.

**Tech Stack:** Flutter, Dart, Firebase, Python, Flask, PostgreSQL, OpenAI API, Google Gemini, REST APIs, BLoC, Provider, GitHub Actions

### Software Engineer – Enterprise Systems

Sep 2020 – Jun 2023

*Tech Mahindra (Client: Genentech)*

*Hyderabad, India*

- Designed and implemented backend services supporting mobile and web applications with high availability requirements, maintaining 99.9% uptime across critical systems.
- Built secure API integrations and backend processing layers consumed by enterprise applications, improving interoperability across internal platforms and client-facing systems.
- Optimized database queries, joins, indexing, and data access paths in relational systems, improving response times and processing efficiency by approximately 40%.
- Developed automated validation scripts and monitoring tools that reduced manual operational work and improved production reliability of enterprise data pipelines.
- Contributed to cloud migration initiatives on AWS using EC2, S3, and RDS, improving deployment reliability, scalability, and infrastructure efficiency.
- Participated in production troubleshooting and incident response, identifying root causes and implementing long-term fixes across backend and data workflows.
- Implemented CI/CD pipelines using Git and Jenkins to automate build, testing, and deployment processes across environments.
- Worked within Agile development cycles using JIRA for sprint planning, issue tracking, and collaboration with distributed teams and stakeholders.
- Designed scalable microservices and improved system resilience using fault-tolerant patterns.
- Enhanced observability through logging, monitoring, and alerting systems.
- Reduced infrastructure costs through cloud optimization strategies.

**Tech Stack:** Python, Java, Spring Boot, AWS (EC2, S3, RDS), SQL, Jenkins, Docker, REST APIs, JIRA

### **Associate Software Engineer**

*Tech Mahindra (Client: Roche)*

**Apr 2019 – Sep 2020**

*Hyderabad, India*

- Refactored legacy enterprise systems to improve reliability and maintainability, reducing production errors by more than 80%.
- Developed ETL pipelines, automated data-processing scripts, and reporting workflows using Python and SQL, improving data accuracy and reducing operational rework.
- Implemented monitoring and validation systems to detect anomalies in production workflows and support faster issue resolution.
- Supported the full software development lifecycle including development, testing, deployment support, and post-release maintenance in Agile teams.
- Built data processing pipelines handling large-scale enterprise datasets.
- Improved system efficiency through query optimization and automation.
- Collaborated with cross-functional teams to deliver stable production releases.

**Tech Stack:** Python, SQL, ETL Pipelines, AWS, Linux, Shell Scripting

### **Product Analyst**

*HCL Technologies*

**2018 – 2019**

*India*

- Developed backend services and automation scripts using Python and SQL for enterprise applications.
- Assisted in building and maintaining scalable web applications and APIs.
- Worked on debugging, performance tuning, and resolving production issues.
- Collaborated with teams to support application deployment and maintenance.
- Gained hands-on experience with Agile methodologies, version control, and enterprise workflows.
- Improved application performance through code optimization and efficient data handling.
- Supported integration of backend systems with client applications.

**Tech Stack:** Java, Python, SQL, REST APIs, Linux, Git

## **Projects**

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### **Odyssey – Cross-Platform Travel Application**

- Built a travel planning application allowing users to create trips, manage itineraries, and discover nearby locations using map-based navigation and a scalable Flutter architecture.
- Integrated Google Maps SDK, authentication, analytics, push notifications, and offline storage to support a reliable mobile-first user experience.
- Applied modular design patterns and structured state management to keep UI, business logic, and data access clean and maintainable.
- Designed scalable UI architecture supporting dynamic content and real-time updates.
- Implemented location-based recommendations and optimized map performance for large datasets.

**Tech Stack:** Flutter, Firebase, Google Maps API

### **Carpool Ridesharing Platform**

- Developed a ride-sharing platform connecting drivers and passengers with ride scheduling, booking management, and secure profile workflows.
- Designed REST APIs for ride creation, booking management, and user profiles, with scalable relational database integrations.
- Deployed backend services on AWS infrastructure and optimized database queries to support scalable operations and better service responsiveness.

- Implemented concurrency-safe booking logic ensuring data consistency.
- Designed scalable backend architecture to handle increasing users and requests.

**Tech Stack:** Java, Spring Boot, AWS, MySQL

### AI-Powered Chat Assistant (Flutter + LLM)

- Built a cross-platform AI chat application using Flutter integrated with OpenAI and Gemini APIs.
- Designed real-time streaming conversational UI using BLoC.
- Implemented prompt engineering for better response quality.
- Built backend APIs for request handling and caching.

**Tech Stack:** Flutter, OpenAI API, Gemini API, Firebase, BLoC

### Product Recommendation System

- Built recommendation workflows using collaborative filtering, ranking methods, and matrix factorization, demonstrating hands-on experience integrating ML logic into usable product features.
- Performed feature engineering and evaluation to improve model accuracy.
- Tuned algorithms and optimized recommendation pipelines for better performance.

**Tech Stack:** Python, Machine Learning

## Education

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### Master of Science in Computer Science

Santa Clara University

GPA: 3.8 / 4.0

2023 – 2025

### Bachelor of Technology in Electronics and Communication Engineering

MGIT, India

2014 – 2018