

# SAINADHA PENUGONDA

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## SUMMARY

Accomplished Software Development Engineer (SDE) with an MS in Information Technology and over Four years of end-to-end full-stack and cloud-native application delivery, and hands-on exposure to Machine Learning and Natural Language Processing (NLP). Expert in Java 17 and Spring Boot microservices, deployed on AWS, and GCP via fully automated CI/CD pipelines to maximize performance and reliability.

## EDUCATION

### University of Cincinnati

Aug 2023 - Dec 2024

M.S., Information Technology

- GPA: 3.9/4.0

## EXPERIENCE

### May We Help NPO

May 2025 - Present

Full Stack Developer

- Architecting Spring Boot microservices for inventory/booking; modeling with JPA/Hibernate on PostgreSQL and Microsoft SQL Server to ensure ACID transactions, optimistic locking, and concurrent, idempotent reservations.
- Exposing REST endpoints for search/reservations/returns; integrating Elasticsearch for real-time filtering/analytics; centralizing logs/alerts with Amazon CloudWatch.
- Implementing security with Spring Security (OAuth2/OIDC/JWT), rigorous input validation, OWASP Top 10 controls, rate limiting, and audit-grade request/response logging.
- Developing an AI recommendation microservice in Python 3.12 (FastAPI); containerizing with Docker and deploying to Amazon EKS (EC2); securing content in Amazon S3 (IAM, encryption, lifecycle).
- Standing up CI/CD with Bitbucket Pipelines + Maven to build, run JUnit, and promote images; gating merges with checks and env-specific configs.
- Automating inventory ops with Make (Integromat)—webhook/scheduled scenarios to sync stock, trigger approvals/notifications, and reconcile discrepancies—reducing manual updates and errors.
- Building a lightweight React front end styled with Tailwind CSS; ensuring an accessible, responsive experience.
- Driving Agile delivery via monday.com—planning sprints, running stand-ups/demos/retros, coordinating stories, and conducting peer reviews to sustain quality and velocity.

### University of Cincinnati

Jan 2024 - May 2025

Software Engineer

Cincinnati, OH

- Led a small feature team, supporting sprint planning and daily stand-ups; triaged and assigned user stories in Jira, clarified requirements with stakeholders, and removed blockers to keep delivery on track.
- Facilitated peer-to-peer code reviews and pair programming; guided teammates on Spring Boot patterns, React best practices, testing strategy, and Git workflows, improving code quality and knowledge sharing.
- Designed and shipped Java 17 / Spring Boot microservices (MVC, JDBC, JPA/Hibernate) with PostgreSQL; integrated Kafka for event-driven communication to enable horizontal scaling and resilient workflows.
- Built 15+ reusable React/Next.js components with HTML5/CSS3, integrating Node.js services; accelerated UI delivery by ~25% while maintaining responsive, cross-browser performance.
- Implemented NLP keyword extraction in a Python FastAPI service for real-time text analysis and recommendations; explored AI-agent patterns using OpenAI APIs and GitHub Copilot.
- Designed and consumed RESTful and GraphQL APIs over PostgreSQL with sub-200 ms p95 response times; secured access via OAuth2, JWT, OIDC.
- Provisioned and operated AWS infrastructure (EC2, S3, VPC peering, Route 53, Auto Scaling); containerized with Docker and deployed to ECS/EKS; built serverless flows with Lambda, API Gateway, DynamoDB.
- Established observability with Dynatrace, and OpenTelemetry tracing for proactive alerting and faster incident triage.
- Automated delivery using Terraform, AWS CDK, GitHub Actions, and GitLab CI/CD; validated reliability with JUnit, Postman, and Cypress, contributing to ~99.9% uptime in Agile/Scrum teams.

### Cognizant Technology Solutions

Oct 2022 - Aug 2023

Programmer Analyst Trainee

Hyderabad, IN

- Maintained and optimized 5+ Spring Boot microservices, reducing downtime by ~30% via HikariCP tuning, SQL/index optimization, and resilient K8s health checks; containerized with Docker and orchestrated on Google Kubernetes Engine (GKE).
- Built and maintained client-facing features in React.js and Next.js, integrating REST services; implemented reusable components, React Hooks/Context, lazy loading, and error boundaries to improve responsiveness and UX consistency.
- Implemented service security with Spring Security; externalized configs via ConfigMaps/Secrets and Secret Manager.
- Built event-driven workflows using Apache Kafka (topic partitioning, consumer groups, retries/DLQ) and Spring Kafka to scale asynchronous processing.
- Engineered data access layers for PostgreSQL (Cloud SQL) and MongoDB; wrote Python utilities for data migration, log parsing, and test-data generation.

- Prototyped a Python inference microservice wrapping a baseline scikit-learn model; containerized and deployed to GKE via Argo CD, tracked experiments in Vertex AI, and monitored latency/errors with Cloud Monitoring/Cloud Logging.
- Designed and tested REST APIs; lifted automated coverage to ~70% with JUnit/Mockito and Jest/Cypress/Postman (API/UI).
- Built a GitOps delivery flow using GitLab CI, Artifact Registry, and Argo CD for declarative releases to GKE; leveraged Helm/Kustomize and progressive strategies.
- Established observability on GCP: instrumented Zipkin tracing; used Cloud Trace for latency analysis and centralized telemetry with Cloud Monitoring, accelerating incident triage and improving efficiency by ~40%.

## Cognizant Technology Solutions

Mar 2022 - Aug 2022

Software Intern

Remote

- Contributed to responsive, cross-browser UIs using React.js, Redux, and Node.js; shipped bug fixes and small features that helped drive a ~40% improvement in UX metrics under senior engineer guidance.
- Assisted in boosting API throughput by ~40% by profiling endpoints, removing bottlenecks, and strengthening error-handling patterns; implemented secure auth flows with OAuth2, JWT, and OIDC following team standards.
- Implemented and tested small REST and GraphQL endpoints; wrote automated checks with Jest, Cypress, and Postman, increasing confidence in critical user journeys and reducing regressions.
- Developed proof-of-concept serverless components on AWS Lambda with DynamoDB; documented latency/cost findings and demoed results to the team for architecture discussions.
- Wrote Python scripts to automate test-data generation and basic analysis; explored introductory AI/ML workflows (data prep, model evaluation) using Pandas and scikit-learn for internal learning tasks.
- Collaborated in Agile sprints: picked up well-scoped tickets, paired with senior developers in code reviews, and contributed to CI/CD practices using Git and Jenkins; documented changes and runbooks for smooth handoffs.

## Squaricle Intelli Solutions

Jan 2021 - Feb 2022

Web Developer

Remote

- Developed and deployed scalable, cloud-ready web applications using Java 17, Spring Boot, and MySQL, reducing manual reporting efforts by 20% through automation of internal tools.
- Built dynamic front-end features with React, HTML5, CSS3, and JavaScript, integrating REST APIs while ensuring responsive design across devices.
- Secured API endpoints using OAuth2, JWT, and OpenID Connect (OIDC), improving platform security and ensuring compliance with modern authentication standards.
- Implemented automated frontend testing using Cypress, Selenium, and Jest, and developed JUnit and Mockito test suites for backend services, significantly improving code reliability, catching regressions early, and increasing overall release confidence.
- Engineered high-performance data access layers using MySQL and MongoDB, designing hybrid storage solutions optimized for query efficiency, scalability, and real-time application responsiveness.
- Deployed containerized applications using Docker, and managed code through GitHub, following CI/CD pipelines aligned with Agile Scrum practices.
- Collaborated across a distributed team to design, build, test, and deploy full-stack features, demonstrating accountability in assigned tasks.

## TECHNICAL SKILLS

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- **Programming Languages:** Java 17+, Python, JavaScript/TypeScript, Node.js
  - **Frameworks & Libraries:** Spring Boot (Microservices, MVC, Batch), ReactJS 18, Next.js, Angular 2+, REST, GraphQL, Kafka, Hibernate, JPA, Maven, jQuery
  - **Databases:** PostgreSQL, MySQL, Microsoft SQL Server, Redis, Oracle, MongoDB
  - **Cloud & DevOps Tools:** AWS (EC2, ECS, EKS, Lambda, API Gateway, S3, DynamoDB), Azure, Docker, Kubernetes, Terraform, AWS CDK
  - **Build & Servers:** Tomcat, Gradle, XML, JSON
  - **Testing & QA:** JUnit 5, Mockito, Jest, Selenium WebDriver, Cypress, Postman
  - **Monitoring & Observability:** ELK Stack (Elasticsearch, Logstash, Kibana), Dynatrace, OpenTelemetry, New Relic
  - **Methodologies & CI/CD:** Agile/Scrum, JIRA, GitHub Actions, GitLab CI/CD, Jenkins, Bitbucket Pipelines