RAJAT PATLE

SENIOR SOFTWARE ENGINEER • AI ARCHITECT • FULL-STACK PYTHON • CLOUD PLATFORM

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Portfolio: rajat-dev-new.github.io • GitHub: github.com/rajat-dev-new • LinkedIn: linkedin.com/in/rajatpatle

PROFESSIONAL PROFILE

6+ YEARS PRODUCTION ENGINEERING

Senior Software Engineer & AI Architect with **6+ years** of production experience specializing in **Python backend systems**, **FastAPI / Django microservices**, **React**, and enterprise **Agentic AI orchestration (LangGraph, RAG)**. Proven track record preparing production cloud infrastructure on **AWS (VPC, RDS, Redis, CloudWatch, SSM)** and automating **Azure DevOps CI/CD** pipelines. Specialized in constructing **deterministic software guardrails** around probabilistic AI workflows, remediating container security vulnerabilities (**Trivy**), implementing enterprise identity (**Okta OIDC with PKCE**), and collaborating directly with international enterprise stakeholders.

TECHNICAL ARSENAL

CORE COMPETENCIES

Agentic AI & GenAI:	**LangGraph**, Multi-Agent Orchestration, **Tool Calling**, **RAG**, **FAISS**, Vector Databases, Graph Databases, **Ollama / Local LLMs**, Prompt Engineering, Memory & Retrieval Patterns, Model Evaluation, MCP Integrations.
Backend & Full-Stack:	**Python 3.12+**, **FastAPI**, **Django**, **Django REST Framework (DRF)**, Flask, **SQLAlchemy**, **Pydantic v2**, **PostgreSQL**, MySQL, **Redis**, **pytest (TDD)**, Microservices, RESTful APIs, **React**, JavaScript, HTML5/CSS3.
Cloud, Platform & DevOps:	**AWS** (**VPC**, **RDS PostgreSQL**, **ElastiCache Redis**, **ECS**, **EFS**, **IAM Least-Privilege**, **CloudWatch**, **SSM**, **Secrets Manager**, **AWS Backup**), **Azure DevOps CI/CD**, **Docker**, **Trivy Container Scanning**, Git, GitHub, GitLab.
Security & Architecture:	**OAuth 2.0**, **OpenID Connect (OIDC)**, **Okta (Authorization Code + PKCE)**, **Azure AD OIDC**, Container CVE Remediation, Zero-Bastion Topology, Deterministic Financial Rule Engines, RFP-to-BRD Synthesis.

PROFESSIONAL EXPERIENCE

CAREER HISTORY

Software Development Senior Specialist · NTT DATA Information Processing Services Pvt. Ltd.

Sep 2025 – Present | Pune, India

Tesseract Forge / NDIL — Enterprise Agentic SDLC & Requirements Platform [LangGraph • RAG • Okta PKCE]

- Architected stateful multi-agent workflows in **LangGraph**, executing automated requirement parsing, **tool calling**, and cyclic verification to synthesize formal Business Requirement Documents (BRDs) from client RFPs.
- Constructed hybrid **RAG retrieval pipelines** querying dense vector embeddings (**FAISS**) and knowledge graph nodes to ground generated specifications in enterprise compliance standards.
- Implemented enterprise SSO integrating **Okta OIDC Authorization Code Flow with PKCE**; resolved encoding and character-rendering bottlenecks for Japanese and Traditional Chinese localization.
- Conducted production telemetry and root-cause debugging across local, staging, and AWS environments utilizing **AWS CloudWatch**, **SSM**, and structured runtime traces.

DENSO / Hyper Intelligence — AWS Production Infrastructure Readiness [AWS VPC • RDS • Redis • Trivy]

- Engineered and validated AWS production infrastructure readiness across multi-AZ **VPC**, private routing tables, isolated subnets, and strict **Security Groups** with zero public ingress to the data tier.
- Configured high-availability **Amazon RDS PostgreSQL** with automated backup retention, **ElastiCache Redis** clustering, **EFS** persistence, and **AWS Secrets Manager** credential rotation.
- Remediated container image vulnerabilities using automated **Trivy scanning** in build pipelines, eliminating High and Critical CVEs prior to ECS task deployment; enforced **IAM least-privilege** policies.

Munich Re — Actuarial Movement Analysis Modernization [Python 3.12 • FastAPI • Azure DevOps]

- Architected and delivered high-speed **FastAPI / Python 3.12** microservices with **Pydantic v2** and **SQLAlchemy**, modernizing legacy Java calculation pipelines for IFRS 17 actuarial movement waterfalls.
- Configured **Azure Active Directory OIDC** authentication and automated build/release pipelines in **Azure DevOps CI/CD**, deploying to hardened external Windows servers via **NSSM**.

GenAI Innovation Centre — Retail Loan Credit Analyst Engine [FastAPI • Deterministic Engine • FAISS]

- Engineered a hybrid credit underwriting engine pairing a **100% deterministic Python calculation core** (amortized EMI formulas, regulatory DTI ≤ 43%) with local LLMs (**Ollama**) and **FAISS** vector search for qualitative memo synthesis.
- Guaranteed complete zero-hallucination arithmetic for financial decisions; achieved 100% test coverage using **pytest**.

Python Developer · Maaze Underwriting Solution Pvt. Ltd.

2023 – 2025 | India

- Engineered backend insurance underwriting services and RESTful APIs using **Django** and **Django REST Framework (DRF)**, modeling complex policy risk lifecycles.
- Optimized **PostgreSQL** schema migrations, query plans, and composite indexes, mitigating transaction locks during high-volume policy evaluations; worked directly with underwriting stakeholders to refine specifications.

Software Engineer · MateBench Software Pvt. Ltd.

2020 – 2023 | India

- Developed full-stack web applications for banking and logistics clients using **Python / Django** and **React / JavaScript**, integrating secure payment adapters and establishing automated **pytest** suites.

PUBLICATIONS & VERIFIED ARCHITECTURE SHOWCASES

RESEARCH & CODEBASES

Research Publication: Deterministic Multi-Agent Systems in Production [DOI: 10.5281/zenodo.24407251 • Zenodo CERN]
Published IEEE-style empirical paper on bounded LangGraph cyclic state graphs (N≤3), schema gates, and 0.0% arithmetic hallucination rate.

LangGraph Agentic SDLC [github.com/.../langgraph-agentic-sdlc]
Stateful multi-agent requirements pipeline: RFP parser, conditional router, FAISS RAG node & BRD generator in LangGraph.

Credit Analyst Hybrid AI [github.com/.../credit-analyst-hybrid-ai]
Hybrid banking underwriting engine: 100% deterministic EMI/DTI rule engine + FAISS semantic search + Streamlit dashboard.

FastAPI Actuarial Service [github.com/.../fastapi-actuarial-microservice]
IFRS 17 actuarial waterfall microservice in Python 3.12/FastAPI with Pydantic v2 and Azure DevOps CI/CD pipeline.

AWS Production Cloud Blueprint [github.com/.../aws-cloud-production-blueprint]
Terraform multi-AZ VPC topology, isolated RDS PostgreSQL, ElastiCache Redis, zero-bastion SSM & Trivy container security scans.

EDUCATION & LANGUAGES

ACADEMIC & LINGUAL

Bachelor of Engineering (B.E.) in Mechanical Engineering
Pimpri Chinchwad College of Engineering, Pune (2016) • First Class
Professional Learning: GenAI Academy Yellow Belt Level 1 • Agentic AI Architectures • PostgreSQL Optimization

Language Proficiencies

- **English:** Fluent (Professional Working Proficiency)
- **Swedish:** Beginner (Actively learning)
- **German:** Elementary (A1)
- **Hindi / Marathi:** Native