

Mohit Kumar Patwari

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SUMMARY

Final-year CSE undergraduate at MSRIT (2027) with hands-on experience building secure backend systems, data pipelines, and real-time monitoring platforms in Python, Node.js, and TypeScript. Shipped three end-to-end projects spanning IT security analysis, database optimization, and incident management — areas directly aligned with IT Risk Management, Information Security, and Digital Banking roles.

EDUCATION

MS Ramaiah Institute of Technology

B.E. in Computer Science and Engineering | **CGPA: 7.98/10.0**

Bangalore, Karnataka

2023 – 2027

Vidhyashram Public School

Higher Secondary (Class XII) | **81.2%**

Kota, Rajasthan

2021 – 2023

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, SQL, C

Databases: PostgreSQL, MongoDB Atlas

Backend & Web: FastAPI, Node.js, Express.js, Next.js, RESTful APIs

DevOps & Tools: Docker, Git, Linux, GitHub Actions

Core CS: DSA, DBMS, OS, System Design

AI & ML: scikit-learn, Pandas, NumPy, Prompt Engineering, Gemini API, LLM Integration, Claude Code

PROJECTS

NetGuard — IaC Security Analyzer | Python, FastAPI, NetworkX, React, PostgreSQL, Docker, GitHub Actions | [GitHub](#) (Feb — June 2026)

- Co-built a **4-microservice IT security platform** (MSRIT Team 18) that performs automated **risk assessment** of cloud infrastructure (Terraform/Kubernetes), blocks deployments on CRITICAL/HIGH findings, and enforces security policy via GitHub Actions.
- Risk Scorer** applies 11 deterministic security rules (SSH exposure, public S3, unencrypted storage, overpermissive IAM, 5 cross-resource attack paths) and enriches findings with **Gemini LLM** explanations and remediation guidance.
- Deployed on **AWS EC2** (Docker Compose) with Vercel frontend; 89+ tests; autofix engine proposes and posts **IaC patch diffs** directly to GitHub PRs for rapid remediation.

Microops Watchtower | Next.js 16, TypeScript, MongoDB Atlas, Upstash Redis, SWR | [GitHub](#) (Oct – Dec 2025)

- Real-time incident monitoring system** for microservice environments: ingests error events via `POST /api/ingest`, deduplicates by SHA-256 fingerprint, and persists grouped incident records with a **risk priority score** in MongoDB Atlas.
- Redis-backed dedup** (Upstash, configurable TTL) with graceful fallback to MongoDB upsert; regex rule engine scores severity across OOM, DB, auth, and payment error patterns.
- REST API with server-side filtering, pagination, and compound-indexed queries; Next.js App Router UI with 5 s SWR polling covers full lifecycle — ingest, triage, and resolve.

Adaptive Index Advisor | Python, FastAPI, PostgreSQL, SQLAlchemy, React, TypeScript, Docker | [GitHub](#) (Oct – Dec 2025)

- Full-stack e-commerce benchmark (5k users, 20k orders, ~40k line-items) on PostgreSQL with a **workload profiler** that polls `pg_stat_statements` every 60 s and recommends the top-3 indexes by `calls × avg_exec_time`.
- Index management API** (`/indexes/apply`, `/indexes/comparison`) creates indexes concurrently, enforces a 3-index rotation cap, and benchmarks seq-scan vs. index-scan timing side-by-side.
- Secured with **JWT + bcrypt** (HttpOnly cookies, RBAC); full stack Dockerized (FastAPI + PostgreSQL + Vite/React) via `docker-compose` for one-command local setup.

ACHIEVEMENTS

- Finalist (Top 60 / 300+ teams)** at CodeRIT's Hackathon, MSRIT — built and demoed a working technical solution under 24-hour time constraint.