

# MOHAMMAD MAROOF

Software Engineer

7418754473 | [mmarroof487@gmail.com](mailto:mmarroof487@gmail.com) | [linkedin.com/in/mohammad-marroof](https://www.linkedin.com/in/mohammad-marroof) | [github.com/mmarroof487](https://github.com/mmarroof487)

## SUMMARY

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Full Stack Engineer with expertise in Next.js, React, TypeScript, Node.js, and Python, with hands-on experience in cryptography, secure API design, distributed systems, and cloud-native architecture. Currently contributing to an enterprise-grade AI cybersecurity platform at SENTRIX across frontend, backend, DevSecOps, and observability domains. Proven ability to deliver production-ready systems with strong emphasis on security, performance, and code quality.

## EXPERIENCE

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### SENTRIX | *Intern*

Mar 2026 – Present

*TalenciaGlobal*

*Chennai, India*

- Designed an Agent Governance layer with FastAPI and Open Policy Agent (OPA) to enforce policy-as-code, achieving 100% block rate against simulated prompt injection and data exfiltration attacks.
- Engineered AI observability pipeline with OpenTelemetry, ELK, Prometheus, and Grafana, enabling real-time monitoring across 10+ services and reducing alert response time.
- Supported development of a horizontal security control plane spanning 11 enterprise security domains, contributing to Byzantine consensus risk modeling and integration fabric design.

### XENKRYPT | *Frontend Development Intern*

Dec 2025 – Mar 2026

*TGL Innovation Accelerator Program*

*Chennai, India*

- Optimized company website with Next.js 14, improving Lighthouse performance and reducing load time through frontend performance enhancements.
- Developed Encrypti V, a secure email platform, delivering full-stack features including PostgreSQL schema design, REST API development, and multi-tenant dashboard architecture.
- Implemented end-to-end encrypted file-sharing workflows with AES-256-GCM and ML-KEM, ensuring data confidentiality in transit and at rest.

## PROJECTS

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### Argus — AI-Powered Secure SQL Gateway | *Python, FastAPI, PostgreSQL, Redis, Docker, LLM Integration*

- Architected a production-grade SQL gateway with multi-layer security, performance, execution, and observability components, including RBAC, encryption, Redis caching, retries, tracing, and alerting.
- Integrated natural language-to-SQL conversion with LLM fallback strategy, enabling reliable handling of complex queries during API outages and degraded conditions.
- Improved query performance by approximately 6x through Redis caching and query optimization, while enforcing daily budget limits and auto-LIMIT safeguards.
- Created 50+ REST API test cases in Postman covering edge cases, failure scenarios, and security validation.

### AthletIQ — AI-Powered Fitness Platform | *React.js, Node.js, Express.js, PostgreSQL*

- Developed a full-stack fitness platform with calorie tracking, workout history, AI-based recommendations, and support for multiple users.
- Designed and validated REST APIs with Postman, improving frontend-backend reliability through comprehensive edge-case testing.

## TECHNICAL SKILLS

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- Languages:** Python, TypeScript, JavaScript, C++, Rust
- Frontend:** Next.js, React.js, Tailwind CSS, HTML5, CSS3, Bootstrap
- Backend:** Node.js, Express.js, FastAPI, REST APIs, Microservices
- Databases:** PostgreSQL, MongoDB, MySQL, Redis, IndexedDB
- Security & Cryptography:** OPA, AES-256-GCM, ML-KEM, RBAC, SQL Injection Prevention, Data Masking
- Observability & DevOps:** OpenTelemetry, Elasticsearch, Kibana, Prometheus, Grafana, Fluent Bit, Docker, GitHub Actions, CI/CD
- Tools & Platforms:** Git, GitHub, Postman, Figma, Sanity CMS

## EDUCATION

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### SRM Institute of Science and Technology

Chennai, India

*B.Tech in Computer Science and Engineering* | **CGPA: 9.76**

*2023 – Present*