

Riza Mohammad Khan

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EDUCATION

National Institute of technology

Bachelor of Technology in Computer Science

Nov. 2022 – July 2026

Srinagar, IN

EXPERIENCE

Software Developer

Automee

July 2024 – Jan 2025

Poland

- Designed and deployed AI agents, including voice bots, and CRM pipelines for 12 international clients. Tech stack included Python, Voiceflow, and JS
- Worked collaboratively in a geographically distributed team environment, coordinating development efforts with engineering professionals across three countries (Philippines, Poland, and India)

PROJECTS

Trix | *Rust, ALSA, Ratatui* | [trix-player](#)

Jan 2026

- Architected a production-grade terminal music player from scratch with direct ALSA integration for hardware-level audio control, achieving zero-latency playback and native system volume management with software fallback mechanisms
- Engineered a high-performance TUI engine using Ratatui with event-driven architecture supporting real-time rendering at 60fps, recursive directory indexing, and fuzzy search across large music libraries (10,000+ tracks) with sub-50ms response times
- Designed an advanced state management system implementing concurrent playback controls (shuffle, loop modes, precise timestamp seeking) with background process suspension mode triggered by F12, maintaining audio continuity while freeing terminal access
- Implemented a deterministic theming engine with RGB color standardization to ensure cross-terminal visual consistency, featuring TOML-based configuration with XDG Base Directory specification compliance
- Built comprehensive distribution infrastructure supporting multiple package formats (.deb, .rpm, .tar.xz), published to Arch User Repository (AUR), and established automated GitHub Actions CI/CD pipeline for multi-target release automation

Serma | *Rust, Tantivy, Axum, DHT Protocol* | [serma-search](#)

Dec 2025

- Architected a decentralized BitTorrent DHT spider and search engine from scratch, implementing the BEP-5 DHT protocol to autonomously crawl and index 10-50K torrents daily from distributed peer networks
- Engineered a multi-threaded metadata enrichment pipeline using BEP-9 (ut_metadata extension) with asynchronous peer connections, reducing metadata fetch latency by establishing direct DHT peer lookups
- Designed a high-performance full-text search system using Tantivy (Rust's Lucene equivalent) with embedded Sled key-value storage, supporting sub-100ms query response times across millions of indexed documents
- Implemented intelligent index maintenance with automatic cleanup algorithms that remove low-quality entries based on seeder counts and activity metrics, optimizing storage utilization and search relevance
- Built production-grade infrastructure with Docker containerization, GitHub Actions CI/CD pipelines, SOCKS5 proxy support for privacy-conscious deployments, and comprehensive environment-based configuration management

COMMUNITY INVOLVEMENT

DreamDay Srinagar | *Hack Club Game Jam* | *Technical Mentor*

Sep 2025

- Served as technical mentor at Kashmir Valley's first-ever game jam, supporting participants with game design, debugging, and rapid prototyping

CodeDay Kashmir | *International Hackathon* | *Technical Mentor*

July 2025

- Mentored young developers at the region's inaugural international coding event, providing guidance on project ideation and programming fundamentals

TECHNICAL SKILLS

Rust, C, Python, Bash, SQL, Git, Docker, Linux (Arch)