# Hari Vigneshwaran S

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## Experience

**Entropik** **Aug 2026 – Present**
*Backend Developer Intern*

- Optimized asynchronous document delivery by replacing AWS Lambda-hosted **WebSocket** notifications with **Server-Sent Events (SSE)**, reducing notification latency from ∼30 seconds to under 1 second (**96.7%+ improvement**).
- Engineered a **question-wise analytics pipeline** for AI-moderated studies, integrating facial emotion, vocal tonality, speech-to-text (STT), and NLP analysis with conditional **AWS Batch** processing and JSON-based analytics storage in **Amazon S3**.
- Extended AI report generation to support **Document and Slides** exports through **Gamma API** integration, implementing format-specific validation and backward-compatible persistence.
- Fixed an **S3 pre-signed URL upload validation vulnerability** by signing the expected Content-Type and restricting uploads to JPG, JPEG, PNG, and WebP, preventing unintended formats such as MP4.
- Implemented **database-backed transcription credit validation** to enforce usage limits, verify available credits before processing, and prevent requests exceeding account quotas.
- Automated **Jenkins CI/CD** triggers by replacing periodic Git repository polling with **GitHub webhooks**, configuring webhook integration to trigger builds on repository events.

## Projects

**AuthX – Advanced Authentication System** *Spring Boot, React, Redis, JWT, OAuth*

- Built a **Redis-backed asynchronous email queue** with retries and dead-letter handling, reducing API response latency from 6,000 ms to 27 ms (**222**×).
- Implemented six authentication flows: password, Google OAuth, TOTP 2FA, magic links, email verification, and password reset with opaque token rotation and **SHA-256 hashing**.
- Designed **role-based admin access (USER/ADMIN)**, account lockout, 16 audit event types, paginated logs, and real-time session revocation.
- Added security controls including **HttpOnly/SameSite cookies**, 15-minute JWT expiry, BCrypt password hashing, rate limiting, credentialed CORS, and stateless APIs.

GitHub Live Demo

## Technical Skills

**Languages:** Java, Python
**Backend:** Spring Boot, FastAPI, REST APIs, Authentication & Authorization
**Databases & Caching:** PostgreSQL, Redis, DynamoDB
**Cloud & DevOps:** AWS, S3, AWS Batch, Lambda, Step Functions, Docker, Jenkins, CI/CD
**Security:** JWT, OAuth 2.0, RBAC, BCrypt, API Rate Limiting
**Observability & Tools:** SigNoz, AWS CloudWatch, Git, Postman, Claude Code

## Achievements & Certifications

- **LeetCode Knight** (1902 rating; top 4.5% globally); solved 300+ problems across data structures and algorithms.
- **Global Rank 3452** in LeetCode Weekly Contest 490, solving all four problems (ranking).
- **AWS Certified Cloud Practitioner**.
- Identified and responsibly reported price-tampering vulnerabilities in product pricing on Tamil Nadu Shopping and hostel fee calculations on the Mepco Schlenk Engineering College portal.

## Education

**Mepco Schlenk Engineering College, Sivakasi** **Oct 2022 – Apr 2026**
*B.E. in Computer Science and Engineering* *CGPA: 7.5*