

Tharunkumar S

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Education

Amrita Vishwa Vidyapeetham

Computer Science Engineering - Artificial Intelligence
CGPA: 8.9/10

September 2023 - Present
Coimbatore, India

Experience

Software Engineering Intern @ [Brillersys](#)

April 2026 – June 2026
Coimbatore, India

Full Stack Development | [Certificate](#)

- Contributed to a production SaaS platform by developing application features and integrating AI-agent workflows that helped clients extract actionable insights from their data.
- Worked on API integrations, workflow versioning and caching mechanisms, collaborating with the engineering team to improve reliability and simplify repeated agent executions.

Projects

Evalify | Rust, Next.js, tRPC, Drizzle ORM, PostgreSQL, Redis, MinIO, Keycloak, Jenkins, Docker | [GitHub Org Link](#)

- Designed and developed a scalable assessment platform integrating a Rust-based proctoring system with a *Next.js*-based application and a *tRPC* API layer for secure test delivery.
- Developed a secure proxy layer in Rust that restricted web access, filtered requests, and enforced token-based access control for exam sessions.
- Developed a controlled browser environment with secure launch configurations for Chrome, Chromium, and Edge, restricting extensions, printing, and local data persistence.
- Designed a stateless evaluation service within a distributed microservices architecture, supporting horizontal scaling and high availability using PostgreSQL read replicas for concurrent workloads.
- Deployed the system using Jenkins CI/CD pipelines, supporting 1000+ active users with automated build and deployment workflows.

SkillSpark | React Native, Expo, TypeScript, SQLite, MediaPipe | [GitHub](#)

- Developed a React Native mobile application that generates personalized learning roadmaps and adapts content based on user engagement signals.
- Implemented a real-time engagement detection pipeline using facial landmarks, head pose estimation, gaze tracking, and EAR/MAR features to identify states such as confusion, frustration, and boredom.
- Implemented a rule-based classifier with threshold tuning, temporal smoothing, and cooldown logic to ensure stable attention state transitions.

Glaucoma Segmentation using UNet | Pytorch, NumPy, Pandas, Matplotlib | [GitHub](#)

- Designed and implemented a Multi-Task U-Net architecture for simultaneous optic disc and cup segmentation and glaucoma classification from retinal fundus images
- Computed cup-to-disc ratio from predicted segmentation masks to support glaucoma risk assessment
- Improved model reliability through image pre-processing, augmentation, and segmentation evaluations.

Technical Skills

Programming Languages: C++, Java, Python, C, Kotlin, Rust, TypeScript, JavaScript

Frameworks & Libraries: Spring Boot, Next.js, React.js, Node.js, React Native, Express.js, PyTorch

Databases: PostgreSQL, MySQL, MongoDB, SQLite

Tools & Platforms: Git, Docker, Jenkins, Redis, Keycloak

Core CS: Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, DBMS

Achievements & Certifications

- CodeChef (3-Star, Peak Rating: 1688)** | [View Profile](#)
- IEEE Publication:** [LSTM-Driven State of Charge Estimation](#), IEEE PIICON 2024.
- Solved 400+ DSA problems across multiple platforms with focus on core algorithmic patterns.
- Intro to ML and Deep Learning* | IIT Madras | [View Certificate](#)
- Large Language Models* | IIT Madras | [View Certificate](#)
- Fullstack Development* | IIT Madras | [View Certificate](#)