

# Karthik Ganesan

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CS undergraduate skilled in back-end engineering, system design, and DevOps with expertise in Golang for building scalable, production-grade systems.

## Education

### Amrita Vishwa Vidyapeetham

Bachelor of Technology in Computer Science | CGPA 8.36

Coimbatore, India  
August 2023 – Present

- **Relevant Coursework:** Database Management, Data Structures, Operating Systems, Computer Networks

### Indian Institute Of Technology, Madras

Bachelor of Science in Electronic Systems | CGPA 7.63

Chennai, India  
August 2023 – Present

## Experience

### LG Electronics India | Software Engineering Intern

Noida, India | [Intern Certificate](#)

May 2025 – June 2025

- Engineered and contributed to LG's conversation platform, which supports 20K+ concurrent users.
- **Stack:** Golang, Docker, TypeScript, CI/CD, AI Agents, MCP

### Genesis-IIC'25 | Full Stack Development

Coimbatore, India

February 2025 – May 2025

[Live](#)

- Developed and deployed an event management portal using **React.js** and **Node.js**, enabling over **700+** users to register and view responsive schedules.
- Collaborated with a team of 7 and delivered the project within a 2-week deadline.

## Open Source Contributions

### Bludis

Go-based Redis implementation

- Implemented **Sorted Sets** functionality in **Go**, similar to **Redis**, using a combination of maps and skip lists for efficient element storage and retrieval based on scores. Achieved **10 million inserts in 2.3 seconds**, handled **5,000 concurrent requests per second (RPS)** with **thread safety ensured through mutex locks**, and reduced memory usage by **30%**, leading to **40% faster lookups** in real-time ranking systems.
- Submitted via **PR #21** which addressed the **Issue #8**.

### LeetPath

Graph-based LeetCode recommender with probabilistic reasoning and topic modeling.

[Live](#)

- Integrated **OAuth** authentication with multiple providers, including Facebook, GitHub, and Microsoft, enhancing user accessibility.
- Secured API key management and worked with the frontend (UI/UX) for a seamless multi-provider login experience.
- Submitted via **PR #7** which addressed the **Issue #4**.

## Projects

### ChainLy AI | TypeScript, Viem, OpenAI API

[GitHub](#)

- Built a **CLI AI agent** for the **Ethereum blockchain** to **send transactions, check balances, and swap tokens**, handling **1,000+ transactions** with **99.9% accuracy** and optimized the response by reducing the time by **40 ms**.

### DexAdofm | TypeScript, Node.js, Prisma, PostgreSQL, Next.js, AWS S3, AWS CDN

[GitHub](#)

- Built a **dApp** where users upload thumbnails, and the community ranks them. Handled **10,000+ uploads** via **AWS S3 & CDN** with **40% faster load times**.
- Integrated **Solana wallet adapter** for secure transactions, supporting **500+ daily users** in an incentivized ranking system.

### Meteomunch | Golang

[GitHub](#)

- Worked on a high-performance **Go-based package** and web server that consolidates and normalizes meteorological data from multiple weather APIs, delivering a curated set of thermal convection parameters **optimized for paragliding use**.
- Designed with a modular, extensible architecture enabling effortless integration into flight planning pipelines; accelerated thermal analysis for paragliders by 70% through intelligent filtering and targeted data delivery.

## Technical Skills

**Programming Languages:** C/C++, Rust, Java, Python, JavaScript, TypeScript, Go

**Frameworks and Libraries:** Next.js, React.js, Recoil, Express.js, Tailwind CSS, PyTorch

**Databases:** MongoDB, MySQL, PostgreSQL, Redis, Prisma.

**Tools and Platforms:** Git, GitHub, Postman, Vim, Docker, AWS (S3, EC2, CDN), Firebase, Arduino, Nucleo

**Monitoring:** Grafana, Prometheus.

**AI and ML Technologies:** MCP, Custom AI Agents, n8n's, Gemini API, OpenAI API.

**Interests:** Competitive Programming, Web3 Development, Full Stack Engineering, System Design, Machine Learning, NLP