

# Singam Naresh

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## PROFILE SUMMARY

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Entry-level Software Engineer skilled in **C, C++, Linux, Operating Systems, Multithreading, IPC, and Networking**. Experienced in building diagnostic systems, debugging large applications, and developing real-time tools. Additional backend experience in **Java, Spring Boot, and MySQL**. Focused on embedded systems, defence-grade software, and high-reliability system development.

## TECHNICAL SKILLS

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**Programming:** C, C++, Java, Shell Script

**Operating Systems:** Linux (Processes, Threads, Signals, Memory, File I/O), OS Concepts, VxWorks/QNX basics

**Multithreading & IPC:** POSIX Threads, Mutex, Semaphores, Pipes, Shared Memory, Message Queues

**Networking & Protocols:** TCP/UDP, Serial Communication, Ethernet, VLANs, ModBus/NMEA basics

**Tools:** Git, MySQL, Spring Boot, Postman, Jira, Eclipse, VS Code

**Strengths:** Debugging, Diagnostics, Root Cause Analysis, System Testing

## PROJECTS

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### Real-Time Diagnostic & Error Monitoring System (C/C++, Linux) 2025

- Built a real-time diagnostic engine for system health monitoring and fault detection.
- Implemented Linux syscalls, signals, timers, and custom logging with severity levels.
- Developed CLI tools to trace deadlocks, crashes, and memory misuse.
- Used Shared Memory and Message Queues for cross-module alerts.

### Multithreaded Sensor Data Logger (C++, Linux) 2025

- Created a real-time sensor logger using POSIX threads and synchronization primitives.
- Implemented thread-safe queues, mutexes, and Pipes-based IPC.
- Reduced logging latency by 27% using a circular buffer and optimized I/O.

### Serial & Ethernet Communication Simulator (C++) 2025

- Simulated serial and Ethernet-based communication using TCP/UDP sockets.
- Implemented ModBus/NMEA-like packet formats with error detection.
- Added packet loss handling, retries, and reconnection logic.

## INTERNSHIP EXPERIENCE

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### Backend Developer Intern – Zymo Cars & Rentals 2025

- Developed backend modules using Java, Spring Boot, and MySQL.
- Debugged API failures and optimized database queries.
- Worked with Git, Linux servers, and Postman for testing.

## CERTIFICATIONS

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**NPTEL – Introduction to IoT: Embedded Systems & Smart Technology** 2024

**Accenture Developer Virtual Simulation – Software Engineering** 2024

## EDUCATION

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**B.Tech – Electronics and Communication Engineering** 2020–2024

Sri Venkatesa Perumal College of Engineering and Technology

CGPA: 6.9