

## Sai Kiran Dasara

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### Professional Summary

Detail-oriented and adaptable with over 8 years of experience in C programming and 2+ years working with Rust. Skilled in systems-level development, memory optimization, embedded Linux, and cross-functional debugging. Passionate about building robust, secure, and high-performance applications. Proven ability to modernize legacy codebases and work in fast-paced, collaborative environments. Currently based in Boca Raton, FL and available for onsite work.

### Core Competencies

- **Languages:** C (5+ years), Rust (2+ years), Python, Shell Scripting
- **Systems Expertise:** Embedded Linux, Windows, RTOS, Bare Metal
- **Development Tools:** GDB, Valgrind, strace, Wireshark, Git, Autoconf, CMake, Make, Cargo
- **Concepts:** Memory Management, IPC, Multithreading, Data Alignment, Concurrency
- **Other Tools:** Jira, Confluence, ServiceNow, Version Control (Git, SVN)

### Professional Experience

#### Software Developer – Embedded & Systems-Level

*Uma Devi Engineering Industries, India*

**Aug 2015 – Aug 2023**

- Developed high-performance C applications for embedded Linux environments used in industrial automation.
- Spearheaded migration of critical modules from legacy C to Rust, improving safety and memory handling.
- Implemented IPC mechanisms (pipes, shared memory, sockets) for inter-process communication in distributed systems.
- Created efficient multithreaded modules using synchronization primitives (mutex, semaphores).
- Debugged real-time failures using gdb and memory tools like Valgrind; achieved 30% crash reduction.
- Integrated CMake-based build systems for managing cross-platform builds across Linux and Windows.

## **Graduate Research & Projects**

### **Rust Re-Architecture for Safety-Critical Modules**

- Rewrote performance-sensitive modules originally written in C to idiomatic Rust.
- Implemented safe memory handling and eliminated 100% of buffer overflow risks.
- Benchmarked performance using Criterion.rs and profilers.

### **Linux Kernel Debug Utility (Academic Capstone)**

- Developed a diagnostic tool in C for monitoring kernel modules and runtime memory using /proc and /sys.
- Used system calls, signal handling, and multithreaded architecture for real-time data polling.

## **Education**

### **Florida Atlantic University – Boca Raton, FL**

M.S. in Data Science & Analytics | GPA: 3.47

### **Anurag College of Engineering – India**

B.Tech in Mechanical Engineering | 70%

## **Certifications**

- **Rust Essentials Certification** – Udemy (2023)
- **Linux Command Line for Developers** – Coursera
- **Embedded C Programming** – NPTEL Certification

## **Open Source Contributions**

- Contributor to [Rust Embedded](#) working group – Submitted PRs for peripheral crates and code examples.
- Developed Rust-based utilities for CSV parsing and performance logging – available on GitHub.

## **Additional Highlights**

- Familiar with Windows/Linux debugging tools (gdb, strace, WinDbg).
- Comfortable with constrained systems including ARM Cortex-M microcontrollers.
- Strong collaborator – worked directly with PMs, FAs, and QA to ensure robust deliverables.