

NAGAM CHATURYA REDDY

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PROFILE

Computer Science student with deep, self-directed experience in systems-level programming: x86 kernel development, low-level bit manipulation tooling, and full Linux system builds from source. Comfortable working close to the hardware in C, C++, and assembly.

EDUCATION

•Amrita School of Engineering, Bangalore

B.Tech in Artificial Intelligence and Data Science

2024 – 2028 (Expected)

CGPA: 8.98 (5th semester)

TECHNICAL SKILLS AND INTERESTS

Languages: C, C++, x86 Assembly (NASM and AT&T), Python

Systems & Low-Level: x86 architecture (Intel IA-32), ARM Cortex-M7, ELF/PE binary formats, Linux internals

Developer Tools: Git, CMake, Ninja, Make, GCC, GDB, MSVC

Areas of Interest: Operating systems & kernel development, offensive security & reverse engineering, embedded systems, hardware security

PROJECTS

•C-STLs

July 2026 – Present

STL-inspired generic container library for C

- Tools & technologies used: C, CMake, Make, GCC, MSVC
- Designed and implemented an STL-inspired generic library for C featuring arrays, vectors, iterator abstractions, and allocator API while preserving portability across major C compilers.
- Actively expanding the library with additional containers, generic algorithms, and comprehensive test coverage.

•BasicOS

Feb 2026 – July 2026

Hobby x86 operating system kernel written from scratch in C and NASM assembly

- Tools & technologies used: C, x86 Assembly (NASM), custom bootloader
- Built GDT/IDT/PIC configuration, a syscall interface via `int 0x80`, and ring 3 userland task switching, validated through deliberate `#GP` fault handling and system calls
- Implemented a FAT16 filesystem driver with stream-based reads, cluster-to-sector translation, virtual keyboard driver and custom libc-equivalent utilities

•Linux From Scratch Build

June 2026 – June 2026

Complete custom Linux system built from source, following the LFS methodology

- Tools & technologies used: GCC cross-compilation, Linux kernel, GRUB, Bash
- Bootstrapped a cross-compiler toolchain and compiled a full base system, including kernel configuration via menu-config and GRUB EFI installation
- Diagnosed and resolved distro-specific build failures across the toolchain (cross-compiler misconfiguration, glibc/ncurses build issues)

EXPERIENCE

•Co-Founder

ATLAS

Sep 2025 – Present

•CS&AI – Lead

Team Odyssey, Amrita Rover Team

May 2026 – Present

•CS&AI – Automation member

Team Odyssey, Amrita Rover Team

May 2025 – Feb 2026

ACHIEVEMENTS

•National Finalist, Novo Nordisk Hackathon

Sep – Oct 2025

•Qualifier, ICPC Regional Programming Contest

Jan 2–3, 2026

•Qualifier, International Rover Challenge (Automation, CS & AI Department)

Jan 27 – Feb 3, 2026