

KANISHKA DAS

Systems Engineer | AI Infrastructure & Low-Level Performance

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SUMMARY

Third-year CS student who gets lost in low-level code: OS internals, compilers, performance optimization, the stuff most people skip because it's hard. Built a shell, a memory allocator, and a 3D renderer from scratch before touching any framework, and shipped real production work for a paying client. Now going deep on AI infrastructure, from transformer internals to local LLM inference.

EXPERIENCE

Whatbytes: Backend Intern

Jul 2026 – Present

- Handled the complete backend flow for real production projects, including Slayer3D and ThinkResonate, as a backend intern at Whatbytes.
- Built and maintained backend services in Django, using Celery for asynchronous task processing and background jobs.
- Focused on backend systems that also serve as MCP connectors, enabling structured tool/data access for downstream AI workflows.

SSG Pharma: Freelance Full-Stack Developer

Apr 2026 – Jun 2026

ssgpharma.com

- Built and shipped a production Next.js site for a pharmaceutical client, live at ssgpharma.com, as part of a small development agency.
- Implemented ISR and Prisma-based performance optimizations, mobile navigation fixes, and custom page transitions.
- Owned the project end-to-end, from client requirements through development and deployment.

RELEVANT PROJECTS

Niyom: Physics Law Discovery from Data

Python, Rust, Tauri

github.com/bhajamaach/Niyom

- Building a tool that discovers governing physics laws directly from raw data using SINDy (Sparse Identification of Nonlinear Dynamics) and LASSO-based sparse regression.
- Designed a custom .niy file format to define datasets and experiments, paired with a Tauri-based desktop dashboard for visualizing discovered equations.

DirectToTheFingScreen: Linux Framebuffer 3D Renderer

C++, Linux Framebuffer

github.com/bhajamaach/dttfs

- Built a low-level 3D software renderer writing directly to the Linux framebuffer with no external graphics libraries.
- Implemented a full transformation pipeline for 3D models using raw pixel manipulation; runs on any Debian-based distro with the DE disabled.

AuraAlloc: Custom Memory Allocator

C

github.com/bhajamaach/AuraAlloc

- Implemented a malloc replacement using the mmap syscall, supporting allocation, deallocation, defragmentation, and block coalescing.
- Supports custom heap sizing for different allocation patterns.

HandSim: Hand Tracking with Custom Renderer

C++, Python, SDL2, OpenCV

github.com/bhajamaach/HandSim

- Built a real-time hand-tracking pipeline streaming coordinates over UDP to a custom 3D renderer client.
- Implemented anchor-point tracking with real-time movement and vector-rotation optimization.

Meowsh: Custom Shell

C

github.com/bhajamaach/meowsh

- Built a Unix-style shell supporting argument parsing, forking/exec, cd, and custom commands.

Other projects: rleCompression: bit-efficient run-length encoding CLI tool (C) | Game of Life: interactive cellular automaton with adjustable rules and state saving (Python, PyGame)

HACKATHONS & COMPETITIONS

CodeSlayer 2k25, NIT Delhi: 1st Place

Nov 2025

- Built a due-diligence copilot using Pathway: an ingestion, embedding, and vectorization pipeline matched against parsed contract clauses to flag ToS and breach risks.

The TechClasher Hackathon, Greater Noida: Top 15

Oct 2025

- Built an AI query router that classifies queries by context and length, runs them locally or via the cleanest available data center, and auto-generates ESG/CO2 compliance reports.

IndustrySolve Idea-Thon, IIIT Delhi: Rank 1, Ideation Round

Sep 2025

- Designed an MPC-based algorithm for a solar switcher board to decide conserve/buy/sell actions using forecasted load and weather conditions.

SKILLS

Languages: C, C++, Python, Java, JavaScript, C#, Rust (learning)

Systems & Low-Level: Custom memory allocators, mmap, socket programming (TCP/UDP), Linux syscalls, multithreading

Graphics & Simulation: SDL2, OpenCV, framebuffer rendering, custom 3D graphics pipelines, vector math

Tooling & Debugging: Git, Docker, Postman, GDB, Valgrind, Make/CMake

Cloud & Deployment: AWS (EC2, S3), shell scripting, basic server setup

EDUCATION

B.Tech, Computer Science Engineering

Aug 2023 – Present

Maharshi Dayanand University, Rohtak | CGPA: 8.8 / 10.0

12th Grade, Science with Computer Science

2021 – 2022

D.A.V. Public School, Kolkata | 91.9%

10th Grade

2020 – 2021

D.A.V. Public School, Kolkata | 94.7%

ACHIEVEMENTS

GATE 2026 (CSE): AIR 12527 | GATE 2026 (DA): AIR 9596