ANKUSH KAPOOR

+91 8108405154 | ankushhkapoor.vercel.app | work.ankushkapoor1626@gmail.com
github.com/ankushhKapoor | linkedin.com/in/ankushhKapoor

EDUCATION

Vidyalankar Institute of Technology   **Mumbai, India**
Bachelor of Technology in Computer Engineering   *Sept 2024 – Present*
- CGPA: **10.0** (First Year), SGPA: **10.0** (Sem 3)
- Expected Graduation: **2028**

EXPERIENCE

Open World Holidays Framework   **Jan 2025 – June 2025**
Open Source Contributor (GWoC Top 1%) & Paid Contributor   *Remote*
- Achieved **Rank 7 out of 2300+ contributors** in Google Winter of Code (GWoC) '24; top-tier performance led to a **paid sponsored task** to implement **Mongolian holidays**.
- Engineered a **lunar calendar** specifically for **Mongolia**, while extending pre-existing date systems to support complex holiday logic for **India** and **Nepal** to support **249 countries** in a library with **20M+ monthly** PyPI downloads.
- Implemented **localization (l10n)** efforts by implementing Hindi and Mongolian translations, ensuring native-language accessibility for regional users.
- **Technologies:** Python, Pytest, l10n, Git , GitHub

PROJECTS

BaseKernel (Custom 32 bit Kernel) | *C, NASM, QEMU, GCC, Linux*   **GitHub**
- Built a **32-bit protected mode** kernel from scratch.
- Implemented **bootloader**, **GDT**, **IDT**, **ISR**, and **IRQ** handling for low-level system control.
- Added **memory paging**, **screen output** along with a **Round Robin scheduler** to enable fair CPU time allocation across tasks.
- Developed entirely without standard libraries to achieve bare-metal execution.

Alloc (Custom Memory Allocator in C) | *C, Linux, NASM, GCC*   **GitHub**
- Created a 32-bit allocator mimicking **malloc()** and **free()** over a 1 GB virtual heap.
- Implemented **alloc(bytes)** to allocate memory in words by taking size in bytes as input.
- Added **destroy()** for secure deallocation with memory zeroing to prevent data leakage, ensuring data privacy.
- Built packed headers, manual tracking, macros for KB/MB/GB allocation, and a **show()** debugger.

Advanced Research AI Agent | *Python, LangGraph, Ollama, BrightData API*   **GitHub**
- Built an AI research assistant that retrieves data from Google, Bing, and Reddit to generate context-rich answers.
- Used **LangGraph** for workflow orchestration and **Ollama LLM** for multi-source reasoning and synthesis.
- Integrated **BrightData APIs** for automated web search and Reddit discussion analysis.

WikiSpeedRunner | *Python, SBERT, Gemini API, Playwright*   **GitHub**
- Built an agent that speedruns through Wikipedia pages by selecting the most relevant outgoing link at each step.
- Implemented two players: a fast **SBERT** vector-similarity model and a reasoning-based **Gemini LLM** agent for accurate pathfinding.
- Automated gameplay using **Playwright**: scrolling, locating links, expanding collapsible sections, highlighting targets, and clicking pages.
- Added run tracking with JSON logging, performance metrics, and optional browser visualisation for real-time playback.

EXTRACURRICULAR ACTIVITY

Our Tech Community (OTC) | ourtech.community   **Jul 2025 – Present**
Core Team Member
- Contribute to planning, organizing, and executing OTC's flagship programs including weekly catchups, technical talks.
- Support community operations by assisting with technical setup and maintenance for OTC events to ensure smooth execution and accessible documentation.
- Manage and grow a vibrant, inclusive, and open for all tech-driven community.

SKILLS

Languages: C, Python, Assembly, Java, MySQL
Developer Tools: Git, GitHub, Makefile, VS Code, Neovim