

ANKUSH KAPOOR

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EDUCATION

Vidyalankar Institute of Technology

Bachelor of Technology in Computer Engineering

- CGPA: 10.0 (Semesters 1-4)

Mumbai, India

Sept 2024 – Present

Expected Graduation: 2028

EXPERIENCE

Open World Holidays Framework

Remote

Google Summer of Code 2026 Contributor (Python Software Foundation)

May 2026 – Present (Expected: Oct 2026)

- Implementing verified holiday coverage for **India** at **national** level and across all **36 subdivisions** (28 states + 8 UTs), cross-referenced against official government gazettes and calendars.
- Building **solar and lunisolar calendar generators** for Hindu festivals including **Diwali, Holi, and Makar Sankranti** etc. using tithi, paksha, and sunrise calculations.
- Expanding multilingual localization support across **10+ Indian languages**.

Open Source Contributor (GWOc Rank 7/2300+) & Sponsored Contributor

Jan 2025 – Jun 2025

- Achieved **Rank 7 out of 2300+ contributors** in Google Winter of Code (GWOc) '25; top-tier performance led to a **sponsored task** to implement **Mongolian holidays**.
- Implemented a **lunar calendar** for **Mongolian holidays** and extended existing holiday-generation systems used for **India and Nepal**.
- Added Hindi and Mongolian translations, improving native-language accessibility for regional users.

PROJECTS

BaseKernel (Custom 32 bit Kernel) | C, NASM, QEMU

[GitHub](#)

- Built a **32-bit protected mode** kernel from scratch, **bootstrapped** from **real mode**.
- Implemented **bootloader, GDT, IDT, ISR, and IRQ** handling for low-level system control.
- Added **memory paging, screen output** along with a **Round Robin scheduler**.
- Developed entirely without standard libraries to achieve bare-metal execution.

Transformer From Scratch (Neural Machine Translation) | Python, PyTorch

[GitHub](#)

- Developed a complete **Transformer architecture** from scratch using **PyTorch**, manually building **multi-head attention, encoder-decoder blocks, and positional encoding**.
- Trained a bilingual NMT model on **OPUS Books** using **greedy and beam search** decoding, implementing **learning-rate warmup** and **label smoothing** for optimized convergence.
- Evaluated performance using **SacreBLEU, WER, and CER** metrics, utilizing **TensorBoard** for experiment tracking and checkpointing logic.

Alloc (Custom Memory Allocator in C) | C, NASM

[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.

TECHNICAL SKILLS

Languages: C, Python, Assembly, Java

ML/AI: PyTorch, Scikit-learn, XGBoost

Tools: Git, GitHub, QEMU

Database: MySQL

OS: Linux (Ubuntu, WSL), Windows

Technologies: GCC, NASM

CERTIFICATIONS

- Machine Learning with Python** – L&T Skill Trainers Academy, Mumbai (Residential Course)

Jun 2026

EXTRACURRICULAR ACTIVITY

Our Tech Community (OTC) | ourtech.community

Jul 2025 – Present

Co-Organiser

- Co-organize and grow a vibrant, inclusive, and open-for-all tech community of currently **600+ members**.
- Plan, organize, and execute OTC's **flagship programs**, including weekly **catchups** and **technical talks**.
- Oversee community operations, including **technical setup and maintenance** for events, ensuring smooth execution and **comprehensive documentation**.

Rotary Divyang Center | rotarydivyangcenter.org

Feb 2026 – Apr 2026

Social Service Intern

- Supported operations at a **prosthetics and orthotics center** providing **artificial limbs**, assisting patients with administration and coordination.
- Built and deployed the center's website to enhance **outreach and accessibility**.