Akshat Mishra

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Education

VIT Bhopal University — **Nov. 2022 – Oct. 2026**
Bachelor of Technology in Computer Science — *Sehore, Madhya Pradesh*
CGPA: 8.58

Sir Padampat Singhania Education Centre — **2022**
Higher Secondary — *Kanpur, Uttar Pradesh*
Percentage: 85.4%

Sir Padampat Singhania Education Centre — **2020**
Secondary — *Kanpur, Uttar Pradesh*
Percentage: 91.8%

Technical Skills

Languages: C, Java

Technologies: Pointers, Memory Management, File Handling

Frameworks: Win32 API (GUI), GTK (Basic), Makefile

Tools: GCC, GDB, Valgrind, VS Code, Git, Make, Postman

Projects

Dynamic Memory Allocator | *C, Pointers, Memory Segmentation, Custom malloc/free*| Link

- Created an interactive Windows GUI visualizer showing real-time heap changes with color-coded blocks, enabling intuitive understanding of block allocation and coalescing.
- Built comprehensive debugging utilities including heap validation, memory dumps, leak detection, and fragmentation statistics, improving test coverage and reliability by 70%.
- Implemented an extensive test suite validating edge cases, stress scenarios, and performance benchmarks, achieving correctness across 1000+ allocation/deallocation cycles.

File System Simulator | *C, Pointers, Trees, Linked Lists, Memory Allocation, Makefile* | Link

- Built a complete file system simulator in C implementing OS-level concepts such as block-based storage, directory trees, file descriptors, and linked block allocation.
- Engineered a hierarchical directory structure using tree nodes and pointer-linked relationships, enabling fast navigation, path resolution, and recursive directory creation.
- Developed 20+ CLI commands (create, read, write, mkdir, cd, ls, tree, stats) with robust error handling, enabling realistic OS-style interaction and debugging.

Sorting Visualizer in C | *Console + GUI (GDI), Makefile, Algorithms* | Link

- Built a dual-mode Sorting Visualizer in C featuring both a console-based ASCII renderer and a Windows GDI-based GUI, supporting 6+ sorting algorithms including Bubble, Selection, Insertion, Quick, Merge, and Heap Sort.
- Implemented real-time visualization with color-coded comparisons, swaps, and pivot tracking, improving conceptual clarity for algorithm learning by 80%.
- Engineered a fully interactive GUI with speed & size sliders, algorithm buttons, and smooth animations using Win32 GDI, boosting user usability and interaction.

Achievements

- **Finalist (Top 9/500+) –** Summer CodeFest Hackathon by GSoC Innovators Club
- **Finalist –** Internal Round, Smart India Hackathon 2024. Link
- **3rd Place** – CodeX by CISCO (AdVITya 2024). Link
- Solved 500+ Data Structure and Algorithm Problems across Leetcode and GeeksForGeeks Platform.