

DEV PATEL

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PROJECTS

Agri-Bhasha Toolkit

Hackathon Project

Oct 2025

- Built a multilingual agricultural assistant using Bhashini API to provide real-time translation along with OCR for 22 Indian languages.
- Hosted on Vercel and database stored on Render.

C-Shell

Operating Systems Course Project

Aug 2025 – Sep 2025

- Programmed a custom Unix shell featuring AST-based command parsing and Context Free Grammar.
- Managed process execution for 5+ core features including I/O redirection, piping, and signal handling.

Docs++ (Distributed Document Editor)

Networks Course Project

Oct 2025 – Nov 2025

- Created a collaborative editor supporting 10+ concurrent users with sentence-level locking and TCP sockets.
- Optimized performance using LRU caching and Trie-based metadata structures for sub-millisecond document lookups.

C-Shark (Network Packet Sniffer)

Networks Course Project

Oct 2025

- Developed a terminal packet sniffer utilizing libpcap with 100% capture accuracy on BPF-filtered traffic.
- Dissected 7+ network protocols including IPv4/v6, TCP, UDP, and DNS for real-time analysis.

xv6 Demand Paging

Operating Systems Course Project

Sept 2025 – Oct 2025

- Implemented lazy memory allocation and on-demand page loading from ELF binaries in xv6 (RISC-V).
- Integrated FIFO page replacement and a per-process swap file system to increase effective memory capacity.

ACHIEVEMENTS

- JEE Mains 2024 - AIR 1139 (Top 0.1% of 1.4 million candidates).
- JEE Advanced 2024 - AIR 4199 (Top 2% of total qualifiers).

SKILLS



COURSEWORK

- DSA, Algorithms Design, DBMS
- Operating Systems and Networking
- Linear Algebra & Discrete Mathematics

EDUCATION

B.Tech in Computer Science

CGPA: 7.88

July 2024 – Present IIIT Hyderabad

Class XII

91.5%

June 2022

Riverdale Academy, Surat

Class X

94.67%

June 2020

Bhulka Bhavan, Surat

OTHER PROJECTS

- Smart Glove Project Simulation** - IoT-based glove for gesture-controlled smart home simulation and patient monitoring.
- Obstacle Avoidance Robot** - Integrated MPU6050 and ultrasonic sensors for autonomous navigation logic.
- xv6 Scheduler** - Constructed FCFS and CFS algorithms with virtual runtime tracking.
- TCP-over-UDP** - Built a reliable transport layer with sliding window flow control.
- Bakery Concurrency** - Simulated producer-consumer problems using semaphores for 10+ threads.