

Mohit Acharya

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EDUCATION

Vellore Institute of Technology

Chennai

Bachelors of Technology in Electronics and Communication Engineering

Aug. 2022 – May 2026

- CGPA: 8.11
- Dramatics Club, English Literary Society

EXPERIENCE

Bitcomm Technologies Intern

December 2024 – Jan 2025

Embedded Systems

Nagpur

- Offloaded audio processing to Nextion's inbuilt processor, reducing ARM Cortex-M7 load.
- Replaced sequential data transfer with batch processing, eliminating constant communication.

Cyber-Physical Systems Research Intern

May 2025 - ongoing

Computer Vision

VIT Chennai

- Working on micro-expression classification

PROJECTS

RISC-V Core Emulator | Python

February 2025 – Present

- Developed a single-cycle emulator supporting the full RV32I instruction set with basic floating-point operations
- Designed a custom assembler and 32 general-purpose registers for instruction decoding and execution
- Implemented memory management with byte/word-aligned access and load/store instruction handling

Nand2Tetris: End-to-End System Implementation | HDL, Assembly, Python, OS Concepts

June 2024

- Designed and implemented key hardware components (ALU, CPU, Memory, I/O devices) using Hardware Description Language (HDL)
- Developed an assembler, virtual machine translator, and compiler for a high-level language (Jack) in Python
- Implemented a basic operating system providing memory management, file I/O, and process control
- Integrated hardware and software layers, demonstrating execution of high-level programs on the custom-built computer

MiniTorrent: Lightweight BitTorrent Client | Python, asyncio, Networking

March 2024

- Implemented a simplified BitTorrent client adhering to core BitTorrent protocol specifications
- Utilized Python's `asyncio` library to handle concurrent peer-to-peer connections efficiently
- Developed modules for tracker communication, peer discovery, piece selection, and file assembly
- Optimized performance by implementing choking/unchoking strategies and parallel piece downloading
- Tested the client on real torrent files, achieving reliable distributed file downloads

TECHNICAL SKILLS

Languages: Python, C/C++, HTML/CSS, CUDA

Frameworks: Pytorch, Tensorflow

Libraries: pandas, NumPy, Matplotlib, PyTorch

CERTIFICATES

Machine Learning Specialization by Andrew Ng on Coursera

Getting Started with Accelerated Computing in CUDA C/C++

DevOps, Agile & Design Thinking by IBM

EXTRACURRICULARS & LEADERSHIP

Badminton University Team: Represented University in Inter-University Matches in singles division.

Dramatics Club: Participated in multiple stage plays, contributing as both an actor and behind-the-scenes organizer.

Debating Experience: Engaged in formal debating competitions, refining logical reasoning and public speaking skills.

Maharashtra Literary Society: Hosted and anchored multiple events, demonstrating confidence in public speaking.