Kushagra Vardhan

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Education

Vellore Institute of Technology, Bhopal — Madhya Pradesh, India
- *Bachelor of Technology in Computer Science* — *2022 – 2026*
  CGPA: 8.31

GD Goenka Public School, Lucknow — Uttar Pradesh, India
- *Class X: 92.4%* — *2020 - 2022*
  Class XII: 92.2%

Skills Summary

- **Programming Languages**: C/C++, Python, HTML, CSS, JavaScript
- **Libraries and Frameworks**: Boost, OpenCV, React JS, Qt
- **Technical Expertise**: Object-Oriented Programming, Operating Systems, Computer Networks, Computer Vision (OpenCV), Low Latency C++, Algorithmic Trading in C++, Version Control Systems (Git/GitHub)
- **Databases**: MySQL

Experience

SRHFT — Remote
Software Developer Intern — *December 2024 – March 2025*

- **Low-Latency Development**: Developed a high-performance **UDP server application** in C++ for real-time market data transmission, optimizing network efficiency and reducing packet processing time.
- **Inter-Process Communication**: Implemented **shared memory (SHM)** mechanisms to enable ultra-low latency data exchange between processes, reducing communication overhead.
- **Market Data Processing**: Designed and optimized a **TBT (Tick-By-Tick) Decoder** for processing high-frequency market data, improving parsing efficiency and reducing system latency.
- **Database Integration**: Integrated **PostgreSQL connectivity in C++** for rapid market data retrieval and storage, enhancing the firm's analytics capabilities.

Projects

ALGO TRADING BOT: GitHub
- Engineered a C++ trading system with Yahoo Finance API integration, implementing advanced technical indicators (MA, Bollinger Bands, RSI) for automated trading decisions.
- Developed a sophisticated backtesting engine with JSON configuration, enabling strategy optimization and performance analysis on historical market data.
- **Technologies:** C++, REST API, OOP, Design Patterns, JSON, Finance

CHATVERSE: GitHub
- Engineered a real-time chat platform with Firebase integration, achieving sub-second message delivery and seamless Google authentication.
- Architected a responsive space-themed UI with dynamic room management, implementing efficient state handling and real-time data synchronization.
- **Technologies:** React.js, Firebase, CSS3, Universal Cookie, Git, Modern JavaScript

AUTO-PLATE RECOGNITION: GitHub
- Developed a computer vision system using YOLOv8 and EasyOCR for real-time vehicle detection and license plate recognition from images/video streams.
- Implemented robust image processing pipeline with OpenCV for plate extraction and text recognition, achieving high accuracy in various conditions.
- **Technologies:** Python, Computer Vision, YOLOv8, EasyOCR, OpenCV, Deep Learning

Certifications & Achievements

- **Outstanding Academic Achievement Award** - Awarded by Defence Minister, Shri Rajnath Singh (2022)
- **Hacktoberfest** - Open Source Contributor (2024)
- **SOF Mathematics Olympiad Gold Medalist** (2015)
- **The Bits & Bytes of Computer Networking** - Coursera — **Completed:** June 2024
- **Cloud Computing** - NPTEL — **Completed:** June 2024
- **GirlScript Summer of Code Extended** - Open Source Contributor (2024)