

Kushagra Vardhan

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EDUCATION

Vellore Institute of Technology, Bhopal • <i>Bachelor of Technology in Computer Science and Engineering</i> CGPA: 8.43	Madhya Pradesh, India 2022 – 2026
GD Goenka Public School, Lucknow • <i>Class X: 92.4%</i> <i>Class XII: 92.2%</i>	Uttar Pradesh, India 2020 - 2022

SKILLS SUMMARY

- **Programming Languages:** C/C++, Python, HTML, CSS, JavaScript
- **Libraries and Frameworks:** React JS, OpenCV, Boost, 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, PostgreSQL

EXPERIENCE

SRHFT <i>Software Developer Intern</i>	Remote <i>December 2024 – March 2025</i>
<ul style="list-style-type: none">• Simulation Platform Development: Designed and implemented a modular simulation framework for backtesting trading strategies in C++ using Boost libraries, supporting more than 10 unique strategies and processing over 2 million market data events per simulation run.• High-Performance Data Feeding & IPC: Engineered shared memory-based data pipelines using Boost.Interprocess, enabling efficient real-time inter-process communication (IPC), and constructed CSV readers/writers to support high-frequency data ingestion at rates exceeding 100,000 events per second.• Market Data Parsing: Architected and optimized tick-by-tick (TBT) and generic market data decoders, allowing accurate replay and analysis of historical data from 3 exchanges and supporting backtests on datasets of more than 1 million ticks per day.• PostgreSQL Database Integration: Integrated PostgreSQL with C++ (using libpq) to store, retrieve and analyze large volumes of market and simulation data, overcoming challenges in data consistency and performance.	

PROJECTS

ALGO TRADING BOT:	GitHub
<ul style="list-style-type: none">• Created a C++ trading platform with Yahoo Finance API, implementing 5 indicators (SMA, EMA, RSI, StochRSI, MACD) for automated trades on major stocks.• Engineered a fast backtesting engine with JSON config, enabling strategy evaluation on up to 5 years of historical data and reporting 8+ performance metrics.• Leveraged data optimizations to achieve sub-100ms backtest latency and process 10,000+ data points per run.• Technologies: C++17, STL, Multithreading, REST API, JSON, Python, Backtesting	
CHATVERSE:	GitHub
<ul style="list-style-type: none">• Launched a real-time chat application using React and Firebase, enabling instant message delivery and secure Google authentication, tested with 10+ users across devices.• Designed and implemented a fully responsive user interface with dynamic room creation and joining, supporting multiple concurrent chat rooms and seamless user experience.• Achieved message delivery latency typically under 300ms in real-time chat scenarios.• Technologies: React.js, Firebase, CSS3, Universal Cookie, Git, JavaScript (ES6+)	
AUTO-PLATE RECOGNITION:	GitHub
<ul style="list-style-type: none">• Implemented a real-time vehicle and license plate recognition system using YOLOv8 and EasyOCR.• Achieved 93% license plate recognition accuracy on a labeled test set of 1,000 images and processed video at 28 FPS.• Tracked multiple vehicles and extracted license plate numbers for each unique vehicle in the video.• Technologies: Python, YOLOv8, EasyOCR, OpenCV, Deep Learning	

CERTIFICATIONS & ACHIEVEMENTS

- **GirlScript Summer of Code Extended** - Open Source Contributor (2024) — **5+ repositories**
- **Hacktoberfest** - Open Source Contributor (2024)
- **Cloud Computing** - NPTEL — June 2024 — **Elite Grade with 82% score**
- **The Bits & Bytes of Computer Networking** - Coursera — June 2024
- **Outstanding Academic Achievement Award** - Defence Minister, Shri Rajnath Singh (2022)
- **SOF Mathematics Olympiad Gold Medalist** (2015)