Kushagra Vardhan

Github: kushagra614
LinkedIn: Kushagra Vardhan
Email: kushagravardhan@gmail.com
Mobile: +91-8858955610

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 (C++), OpenCV
- **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
- **IDEs and Code Editors**: Visual Studio Code, Visual Studio

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.
- **Order Book Development**: Implemented a **lightweight order book** in C++ for efficient tracking of market orders, optimizing data structure usage for real-time updates.

Projects

- **ALGO TRADING BOT**:
  - Designed a low-latency algorithmic trading bot in C++ that processes real-time market data, executes trades based on technical indicators (Moving Average Crossover, Bollinger Bands), and integrates multithreading for parallel processing and backtesting for strategy evaluation.
    Link: GitHub
    Skills: C++, Algorithmic Trading, Multithreading, Risk Management, Financial APIs, Backtesting.
- **VISUAL PAINTER**:
  - Developed a real-time color tracking tool in C++ using OpenCV, enabling users to draw on the screen by tracking detected colors with efficient contour detection and image processing for smooth interaction.
    Link: GitHub
    Skills: C++, Computer Vision (OpenCV), Real-time Image Processing, Color Detection.
- **DOCUMENT SCANNER**:
  - Built a document scanning tool in C++ with OpenCV, leveraging edge detection (Canny algorithm) and perspective transformation to generate a top-down, high-quality scanned image from photos or live camera feeds.
    Link: GitHub
    Skills: C++, Computer Vision (OpenCV), Canny Edge detection, Contour Detection.
- **BANK MANAGEMENT SYSTEM**:
  - Created a C++-based bank management system with features for account creation, deposits, withdrawals, balance checks, and account deletion, using file handling for data persistence.
    Link: GitHub
    Skills: C++, OOP, File Handling.

Certifications Achievements

- Awarded by Defence Minister, Shri Rajnath Singh for outstanding academic achievement (2022)
- 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 Ext - Contributor (2024)
- Hacktober Fest - Contributor (2024)