Dhruv Patel

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WORK EXPERIENCE

Matrix Comsec Private Limited   01/2023 – Present
Engineer - Software Development   Vadodara, Gujarat

- Proficient in designing and developing client-based Windows and **Streaming applications** that communicate with servers using socket programming, and skilled in using **VC++ within the MFC** framework to create robust software, including thorough documentation.
- Designed and developed key UI components and custom dialogs in the frontend application to enhance usability and user experience.
- Led the Designed of **playback control** system by implementing an event queue for actions like play, pause, speed etc. controls. Enabled non-blocking UI interactions by decoupling event handling, improving responsiveness and user experience.
- Worked with **OWASP** standards to ensure compliance with security best practices.Addressed security-related issues such as securing communications, preventing injection attacks, and mitigating vulnerabilities.
- Gained experience in **OpenCV** for manipulating video data. Learned and applied **MFC (Microsoft Foundation Classes)** and **VC++** for Windows application development.

PROJECTS

Scalable Pipeline Manager (C++ with GStreamer)

- Engineered a modular media pipeline manager in **modern C++ (C++17)** using GStreamer for live video streaming and processing.
- Used **smart pointers**, RAII, and multi-threading for efficient memory and concurrency handling.
- Handled **RTSP**, codec configuration, and dynamic pipeline graph creation with robust error management.

SKILLS

- **Languages:** C++ (C++11/14/17/20), C, Python (basic)
- **Core Skills:** Data Structures, Algorithms, Object-Oriented Programming, Multithreading, Memory Management, Socket Programming
- **Tools and Tech:** Git, GitHub, MSVC, GCC, MFC, FFmpeg, OpenCV, GStreamer, Visual Studio 2022, VS Code.

ACHIEVEMENTS

- Secured **2nd Place** at **Pear Global Hackathon** for building a real-time peer-to-peer chess game using Hyperswarm with decentralized networking and state synchronization.

EDUCATION

Dharmsinh Desai University   07/2019 – 05/2023
B.Tech in Computer Engineering   CPI: 7.62

Ashwamegh Vidhyalaya   06/2018 – 05/2019
12th Board (Science PCM)   Percentage: 86.3%