Svojas A

Email | LinkedIn | GitHub

EDUCATION

PES University August 2023 – Present

B.Tech in Computer Science & Engineering | CGPA: 8.03 / 10 Bengaluru, India

- Coursework: Operating Systems, Computer Networks, Database Systems, Big Data, Cloud Computing
- Four-time recipient of the Distinction Award Scholarship

EXPERIENCE

Center for Augmented and Virtual Environments (CAVE) June 2025 – July 2025

Summer Intern Bengaluru, India

- Built a real-time VR ICU monitoring system in Unity that ingests live patient sensor data streamed over UDP and visualizes vitals including heart rate, SpO2, and blood pressure on an interactive in-simulation dashboard for immersive clinical monitoring.
- Developed a Python bridge pipeline integrating live sensor data with a Random Forest ML model for real-time anomaly detection, triggering instant alerts within the VR environment to simulate critical patient deterioration scenarios.
- Designed an interactive CPR training simulation using a physical manikin, applying digital twin concepts to replicate realistic patient physiological responses, supporting hands-on emergency medical and surgical skill development.

PROJECTS

Priority-Aware Industrial IoT Data Processing Framework

- Engineered a priority-aware IIoT data processing pipeline using a Mamdani fuzzy inference system with 27 rules to classify sensor events and route them through KafkaFlink, RabbitMQSpark Streaming, and Hadoop for real-time and batch analytics.
- Integrated Phi-3 Mini LLM via Ollama for asynchronous contextual reasoning over processed pipeline outputs, generating fault explanations, root cause analysis, and operator action recommendations without impacting real-time latency or throughput.

Custom Hotel Website

- Architected a full-stack hotel booking platform with secure user authentication, role-based admin controls, and RESTful APIs using the MERN stack.
- Streamlined booking and user data management by designing MongoDB schemas enabling efficient storage, updates, and retrieval of customer and reservation data.

Dynamic Content Streaming Platform

- Architected a real-time adaptive content streaming platform using Apache Kafka, implementing a controlled dynamic topic lifecycle from creation requests to admin approval to live streaming via the Kafka Admin API, backed by a centralized SQLite/MySQL database managing topic metadata and user-subscription mappings.
- Built a multi-threaded Python producer with dedicated Publisher, Input Listener, and Topic Watcher threads for concurrent real-time message ingestion, alongside dynamic consumer logic for real-time topic subscription management, exposed through a web UI for admin approvals and live stream visualization.

Intrusion Detection System

- Implemented a real-time intrusion detection system using raw socket programming and deep packet inspection techniques.
- Detected network threats such as SYN floods and port scans, enabling early identification of malicious activity in network traffic.

SKILLS

Languages : Python, JavaScript, C, SQL

Tools : MERN Stack, MongoDB, REST APIs, Kafka, Flink, Spark Streaming, Hadoop, RabbitMQ, Unity, Git, Linux

Soft Skills : Problem Solving, Analytical Thinking, Communication, Team Collaboration, Adaptability