KORADA KALYAN VARUN KUMAR

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Education

Btech-Electronics and Communication Engineering — 2021 – present
Amrita Vishwa Vidyapeetham-Chennai — Chennai, India

Professional Experience

IEEE, *Amrita Vishea Vidyapeetham IEEE Student Branch* — Oct 2023 – Oct 2024
Chair of IEEE Student Branch — Chennai, India

Intern, *IIT Madras 5G TestBed Lab* — Apr 2024 – Jun 2024
Chennai, India

Intern, *Nokia Solution and Networks* — Jun 2023
Chennai, India

Projects

Signature and Face Authorization Using Matlab — Jan 2024 – Apr 2024
Applied Normalized Cross-Correlation (NCC): Leveraged NCC for precise face and signature matching, improving system accuracy.
Implemented Eigenfaces: Utilized dimensionality reduction techniques (PCA) for robust face recognition, enhancing computational efficiency.
Integrated Dynamic Time Warping (DTW): Employed DTW for signature verification to handle time-series variations, ensuring high precision in signature authentication.

Traffic Light Controller using LFSR (Linear Feedback Shift Register) Feedback Polynomial — Jan 2024 – Apr 2024
Pseudo-Random Number Generator (LFSR): Designed and implemented a pseudo-random number generator using Linear Feedback Shift Register (LFSR) for dynamic traffic light timing.
VHDL-Based Controller Development: Developed and verified the controller logic in VHDL, utilizing Xilinx Vivado for FPGA simulation, synthesis, and optimization.
Traffic Flow Optimization: Integrated non-deterministic timing intervals in traffic light control to enhance traffic flow efficiency, reducing congestion and improving throughput.

Obstacle avoidance robot using raspberry pi 4 B — Sep 2023 – Dec 2023
Developed an object detection system using ultrasonic sensors to identify and track obstacles, optimizing navigation and path planning. Utilized Thonny IDE, Raspberry Pi Imager, RealVNC Viewer, and network analyzers to design, prototype, and remotely monitor the system, ensuring seamless functionality and real-time performance

Coal Mine Safety Monitoring and Alerting System — Oct 2022 – Dec 2022
Designed and executed a multi-sensor monitoring system to track gas levels, temperature, and humidity in coal mines. Integrated real-time data transmission to a central system for continuous monitoring, triggering automated alarms and notifications during hazardous conditions. Enhanced safety protocols through early detection and prevention of potential risks, ensuring timely alerts and reducing accident occurrence.

Skills

Python | IOT | 5G technology | CST Studio | Altium |
Circuit Design and Analysis (Arduino IDE, Proteus, LTSpice, Multisim, TinkerCAD) |
Digital Design (VHDL, Verilog, Keil µVision) | Ansys HFSS | Matlab | Xilinx Vivado | Jupyter Notebook | Google Colab

Certificates

DSA

Young professional

People and Soft Skills Assessment