Aryan Jha

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Profile

Pursuing Electronics and Telecommunication Engineering (ETC) undergraduate studies with a minor in Artificial Intelligence/Machine Learning (AI/ML) at GEC.

Education

Goa College Of Engineering Ponda, Goa
B.E in Electronics and Telecommunications and Minor in Artificial intelligence and ML ***CGPA: 9.07*** *(2021 – 2025)*

The King's School Sao Jose De Areal, Goa
(XI-XII) PCMB SCIENCE, *(2019 - 2021)*
Reasoning And Aptitude Olympiad – Gold Medalist and Track and Field (Relay Race) Team member

Experience and Projects

Space Applications Centre, ISRO: Research Intern 2024
Space Applications Centre, ISRO *Ahmedabad, Gujarat*
- FPGA-Based Embedded Systems: Development and Integration of Communication Protocols for Navigation Processing
- Designed and implemented FPGA communication systems using Ethernet, UART, and JTAG for data transfer between FPGA and PC, established communication protocols between FPGAs using MATLAB for simulation and testing
- Performed high-level synthesis and latency optimization (loop unrolling, pipelining) in Vivado/Vitis for matrix multiplication (10x10)

GEC CODERS Club: Social Media Head 2023
Goa College Of Engineering *Ponda, Goa*
- Ideation and organization of multiple workshops
- Managed social media presence (Instagram, Linked-In) to increase engagement

Hackathon Project: Automated Bell System 2022
Goa College Of Engineering *Ponda, Goa*
- Developed and implemented an automated bell system using ESP32 as server and controller.
- Hosted a self-developed website to regulate the bell's functioning with the aid of an RTC chip
- The bell schedule could be remotely configured through a secure-access website accessible solely by authorized personnel.

Project: Image Processing - Steganography 2023
Goa College Of Engineering *Ponda, Goa*
- Implemented image steganography techniques in Python to conceal confidential data within digital images.
- Explored data hiding methods like **Least Significant Bit (LSB)** modification to embed messages without compromising image quality.
- Developed a program capable of encoding and decoding hidden messages within image files. (Used PIL,numpy)

Hackathon Project: Motion Detection with ESP32 CAM 2024
Goa College Of Engineering *Ponda, Goa*
- Developed a motion-activated system using ESP32 CAM and image processing (**frame difference detection**) to enhance energy efficiency.
- The system automatically switches on lights and fans upon detecting motion, promoting convenience and reducing energy waste.

Technical Skills

Languages:C/C++, Verilog, VHDL, Python, HTML/CSS, R
Tools and Environments:Vivado, Vitis, Vitis HLS Git, VS Code, Arduino IDE, Familiar with Linux systems and BASH , RASPBERRY-PI, ESP32
Libraries: Pytorch, openCV ,pandas, NumPy, Matplotlib
Fields Of Interest:VLSI SOC design, Image Processing, Signal Processing, AI and ML

Certifications and Achievements

- **3rd Place Winner** in ETC Hackathon - Automated Bell System (2022)
- Completed **Verilog HDL Workshop** by **IEEE GEC** (2024)
- **VLSI SoC Design using Verilog HDL Certification** by Maven Silicon (2024)
- **ISWDP Level 1** Completion by **IISc and Synopsys** (2024) - Gained foundation in semiconductor design principles with **Sentaurus TCAD**
- **NPTEL Certification in Python** by IIT Madras (2022)
- **NPTEL Certification in Natural Language Processing** by IIT-Kharagpur (2023)