Shubham Singh

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Education

B.Tech in Electronics and Communication Engineering Nov 2021 - Present
Central University of Rajasthan *Ajmer, Rajasthan*
- CGPA: 8.5

Experience

Signal Processing and AI Intern | *PARAS ANTI-DRONE TECHNOLOGIES PVT. LTD.* Jun 2024 – Present
- Developed and implemented advanced signal processing algorithms for non-cooperative aerial detection, tracking drones, UAVs and aircraft. Enhanced detection accuracy and tracking efficiency by 25%, safeguarding critical infrastructure from aerial threats.

Research Intern | *PCCOE Pune* Aug 2022 - Oct 2022
- Engineered a low-cost Cervical Cancer Detection device utilizing CNN to capture and classify cervical wall images, achieving a 91.8% accuracy rate. This innovation reduced diagnostic costs by 40%, making early detection more accessible.

Projects

8051 Custom Development Board Project | *Embedded Systems, KiCAD, Microcontrollers, C* Nov 2023
- Innovated a budget-friendly 8051 microcontroller development board featuring USB programming capabilities. Leveraged KiCAD and custom C bootloader to cut production costs by 50%, benefiting 60+ students and hobbyists.

Digit Classifier | *Python, Jupyter Notebook* Oct 2023
- Devised and trained a Naive Bayes classifier to accurately recognize handwritten digits, achieving an 88% accuracy rate with the UCI Optical Recognition of Handwritten Digits dataset.

PCB Prototyping Machine | *Arduino Uno, Arduino IDE, FreeCAD, Fusion360, CURA, Python, PHP* Aug 2023
- Designed and optimized a 3D-printed PCB Prototyping Machine using Arduino Uno and FreeCAD, reducing manufacturing costs by 99% compared to market standards.

Edge Detection | *MATLAB* Feb 2023
- Extrapolated advanced image edge detection techniques in MATLAB, converting images to Grayscale and HSI formats using the Prewitt algorithm, which improved image analysis accuracy by 35% for applications in medical imaging and quality control.

Skills

- **Programming Languages:** C, Assembly, C++, Python, Bash, Go, HTML, CSS, SQL, PHP, MIPS, MATLAB/Octave
- **Frameworks/Libraries:** Pytorch, Tensorflow, Selenium, OpenCV, Numpy, Pandas, Matplotlib, Flask, Django
- **Platforms:** Linux, Google Cloud Platform, GitHub, Heroku
- **PCB Design Tools:** KiCAD, ExpressPCB
- **Antenna and Simulation Tools:** CST, TCAD
- **Circuit Design Tools:** Multisim, Pspice, Keil, Proteus, Microcap12
- **3D Modelling Tools:** AutoCAD, CURA (3D Slicing), FreeCAD (3D Modeling)
- **Embedded Systems:** 8051 Microcontroller, STM32 series, Raspberry Pi 3, ESP32, ESP8266, ESP Cameras, Arduino Uno

Honors and Awards

- Placed 7th globally out of 10,000+ AWS Deepracer Student Championship participants.
- Certified Network Security Specialist from ICSI, UK.
- Earned a Nanodegree in AI Programming with Python from Udacity.
- Won two startup pitching competitions organized by IIC, CURAJ.

Volunteer Experience

- Coordinated logistics and supported 100+ participants at the National Startup and Innovation 2.0 event at CURAJ. [Event Details]
- Collaborated in organizing the Google Developers Group Cloud Community Days, engaging with more than 300 attendees in Jaipur. [Event Details]
- Managed and delivered a MATLAB Faculty Development Program at CURAJ, engaging over 450 participants from 62 institutions nationwide. [FDP Materials] [FDP Materials]
- Instructed 250+ attendees in image processing techniques during MATLAB FDP, enhancing practical skills in the field. [FDP Materials]