Saksham Sharma

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SUMMARY

An enthusiastic and versatile electronics major student currently in his 4^{th} semester. Seeking to put skills in Robotics and Automation, and Embedded Solutions into work. Also have worked on Control Systems, and Image Processing and Data Analysis projects.

EDUCATION

R.V. COLLEGE OF ENGINEERING
B.E. in Electronics and Communication Engineering
in 4^{th} sem | Bengaluru, Karnataka
Current CGPA: 9.35 / 10.0

AKLANK PUBLIC SCHOOL
Higher Secondary School
2018 | Kota, Rajasthan
CBSE (PCM): 83.33%

DAV INTERNATIONAL SCHOOL
Secondary School
2016 | Ahmedabad, Gujarat
CBSE: 10 CGGP

SKILLS

SOFTWARES
Multisim • SPICE • Proteus • Fusion360 MATLAB • ILWIS • Blender • Unity • KiCad • SolidWorks • After Effects • Premier Pro • Photoshop

LANGUAGES
Embedded C • C++ • Python • Verilog • LaTeX

FAMILIAR FRAMEWORKS:
ROS • OpenCV • Gazebo • Docker • GCP

HARDWARE
Atmel Architecture • nodeMCU • Photon • Raspberry Pi

EXPERIENCE

TITAN ENGINEERING AND AUTOMATION LIMITED (TEAL)
Student Internship
Aug 2021 – Sept 2021 | Hosur, Tamil Nadu

- Worked on a R&D project developing a UR5 based pick & place machine built around ROS framework.
- Implemented template matching algorithm for detection of an object in accordance to industrial standards.
- Project was completed within timeline and exceeded expectation of senior management.

ASTRA ROBOTICS | Senior Associate
2019 – Present | Bengaluru, Karnataka

- Developing the control system of a quadruped robot.
- Participated in Indian Rover Design Challenge 2020 by Mars Society South Asia.
- Currently participating in Flipkart Grid Challenge.
- Participated in ARTPARK competition by IISc Bengaluru.

IEEE SIGNAL PROCESSING SOCIETY (SPS), RVCE | Treasurer
2020 – Present | Bengaluru, Karnataka

- Handling event payments and day-to-day transactions of the society.
- Planning of events and workshops.

PLANET EARTHLINGS | Game Development Engineer Intern
Sept 2017 – Oct 2017 | Ahmedabad, Gujarat

- Within the Unity Game Engine, I created an in-game communication system and a video syncing framework.
- Created the fundamental framework for a multiplayer gaming environment.

PROJECTS

MACHINE TENDING ROBOT | Python, ROS, OpenCV

- Created a UR5 based machine tending robot with Basler's camera.
- Implemented Fourier-Mellin transform based vision detection system up-to industry standards
- Created the ROS-framework and drivers needed to interface with hardware for the setup.

SAHAYAK BOT | Python, ROS, Gazebo, Riviz

- Robot was made for the IIT-Bombay's e-Yantra Competition 2020.
- Simulation of the robot navigating through obstacles using Intel Real Sense camera and LIDAR. Sensor fusion technique (EKF) and SLAM was used for the purpose.
- Object recognition and motion planning of the arm towards the specified location.

COURSEWORK

UNDERGRADUATE

Microprocessor and Microcontrollers
Verilog
Analog and Digital Circuits
C Programming
Electromagnetic waves

HOBBIES

Tabla and Drums
Animation
Video Editing and SFX
Swimming
Cycling
Drama

CERTIFICATION

Intermediate Robotics by Edubotix (Gridbots)
Google Cloud Computing by Qwiklabs

AWARDS

1^{st}	Tiny Tinkers by MakerFest
1^{st}	Fab-a-thon by FabLab, CEPT
2^{nd}	IIT Gandhinagar Innovent Competition
Top 150	IEEEXtreme Coding 14.0 (National)
Nationals	Intel Tech Challenge

SNAPPY | C++, Sensor development, IFTT, IOT

- A knock based home assistant together with RF connected extension board.
- Gadget also incorporated PIR sensor to optimize the energy efficiency of the house.
- Piezo and microphone were used to create a knock sensor. Because of the device's high sensitivity, it also worked as an intruder alarm.

PICK AND PLACE ROBOT | C++, Fusion360, 3D Printing

- It was an entry for IIT-Bomabay's Cosmo Clench Competition.
- Designed the arm tailor for the problem statement given by the organizers.
- Control mapping was tuned to suit the user while aiming for enhanced drive ability. Implemented a communication system utilizing PWM signals meant for controlling of servo motor.

RAY TRACED RENDER ENGINE | C++

- A ray-traced engine is currently being developed with support for numerous materials and the ability to render an STL file are the goals.
- Wrote an algorithm for diffusive and reflective material.
- Gamma correction, anti-aliasing, and albedo adjustment were implemented.

AID FOR VISUALLY IMPAIRED | C++, Proteus, Fusion360

- This project was awarded 2nd @IIT-Gandhinagar's Innovent '16.
- The system was created to assist those who have lost their vision in navigating the environment and using touch-screen phones.
- It was developed in tandem with the Blind People's Association, Ahmedabad.