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Bal Krishna Shah

bkshah0012@gmail.com +977-9803458411 Bal Krishna Shah GopiKrish-na

Summary

A highly motivated and passionate engineering student and tech enthusiast with hands-on experience in IoT, 3D design, and product development, eager to embrace opportunities to learn and innovate. With a solid foundation in electronics, communication, and information engineering, cultivated a deep understanding of technology and its practical applications.

Areas of Interest

Robotics, Automation, Internet of Things, Microelectronics, Microcontrollers, Artificial Intelligence, Machine Learning, Computer Vision, Sensors, Embedded Systems

Skills

- **Programming Languages:** Python, C/C++, C#, MATLAB, Assembly (8085, 8086)
- **Tools and IDEs:** VS Code, PyCharm, MATLAB, EasyEDA (Circuit Design), Onshape, Fusion 360, Intellij IDEA, CoppeliaSim (Robotics Simulation)
- **Libraries and Frameworks:** OpenCV, TensorFlow, NumPy, SciPy, Pillow, Pandas, Mediapipe, Matplotlib, Scikit-Learn, YOLO
- **Embedded Hardware:** Arduino, Esp32, Esp32-Cam, Esp8266

Projects

Enhancing Humanoid Robot Functionality Through Vision-Based Navigation with Fall Recovery and Object Manipulation *Present*

- A miniature humanoid robot with 20 DoFs capable of navigating to an object, pick and place it to required location with fall recovery based on vision and gyroscope sensor
- Tools Used: Esp32, MPU6050, Fusion-360, Proteus

Virtual hand Simulation of Hand Gestures using Hall Effect Sensors *github*

- Developed a wireless physical wearable glove that allows users to interact in virtual environment by manipulating the glove using Hall-Effect sensors
- Tools Used: Onshape, Node Server, Unity

Radio Controlled Automatic Agricultural Robot *2017*

- Developed a radio controlled robot capable of planting seeds automatically and water based on moisture in the soil using in-house seed planting mechanism and moisture sensor
- Tools Used: RF Tx/Rx, Moisture sensor, Arduino

Education

Institute of Engineering, Tribhuwan University *2021 – Present*
Bachelor in Electronics, Communication and Information Engineering

National Examination Board, Aroma College *2018 – 2020*
+2 Science