Personal Projects Shashank Noubade

Project #1, WARROX

Why?

* To estimate roll and pitch angles of aircraft w.r.t fixed frame of reference
* To be used for feedback in an autonomous control system

3-axis Accelerometer

A blue and red airplane with white text

Description automatically generated

3-axis Gyroscope

How?

* Designed a custom PCB for STM32F411CEU6 to interact with IMU(MPU-6050) and Pressure Sensor (SPL06) using Altium.

Voltage regulator (+5VUSB to +3V3)

Microcontroller (STM32)

IMU and Pressure Sensor (via I2C)

USB

SD Card

Debugger

Future

* Develop firmware for STM32F4 PCB.
* Implement Complementary filters to combine accelerometer and gyroscope data and pass necessary filters.

A green circuit board with many small chips

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