University of Essex

Interfacing Android with a Quadrotor

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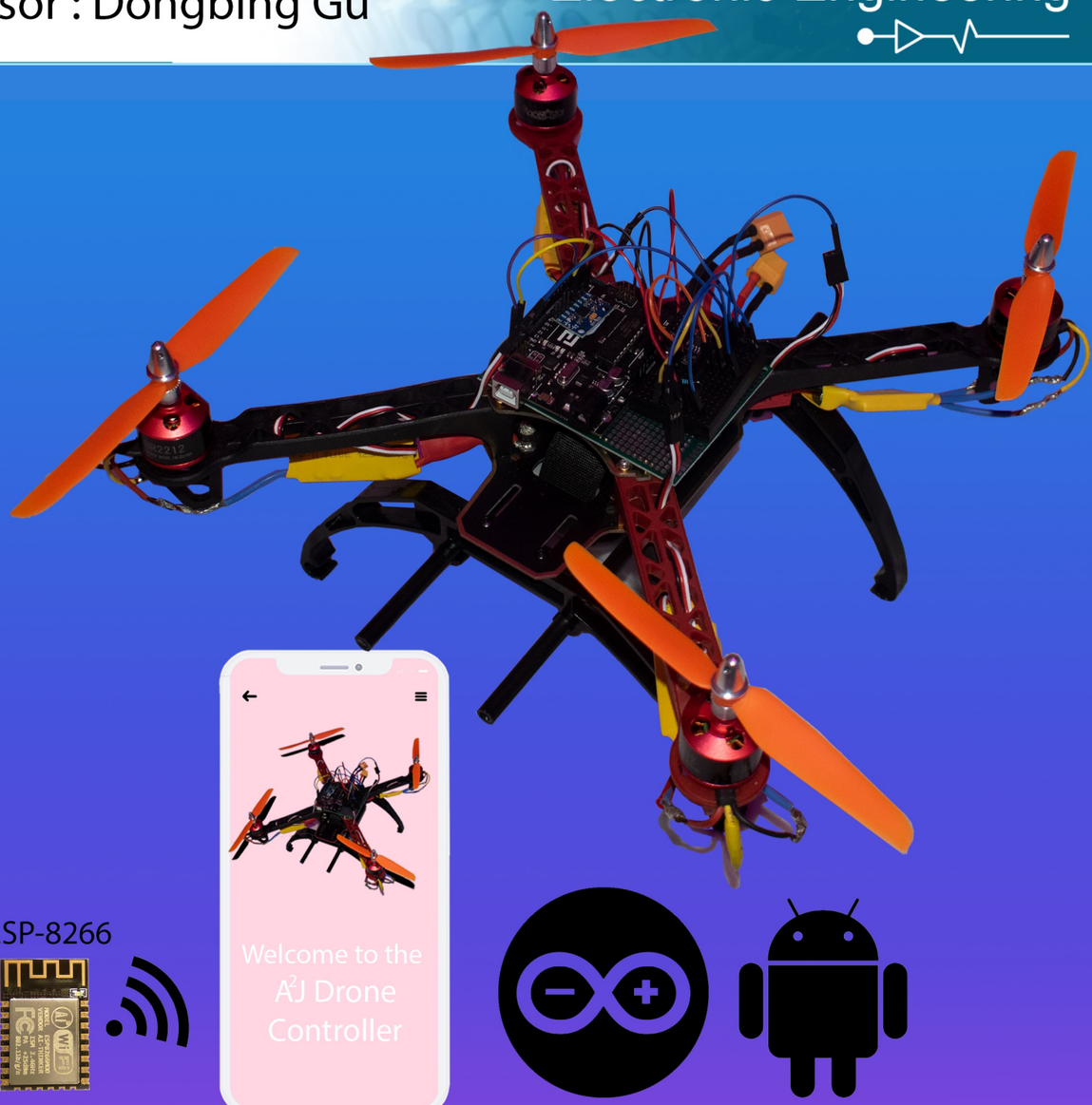
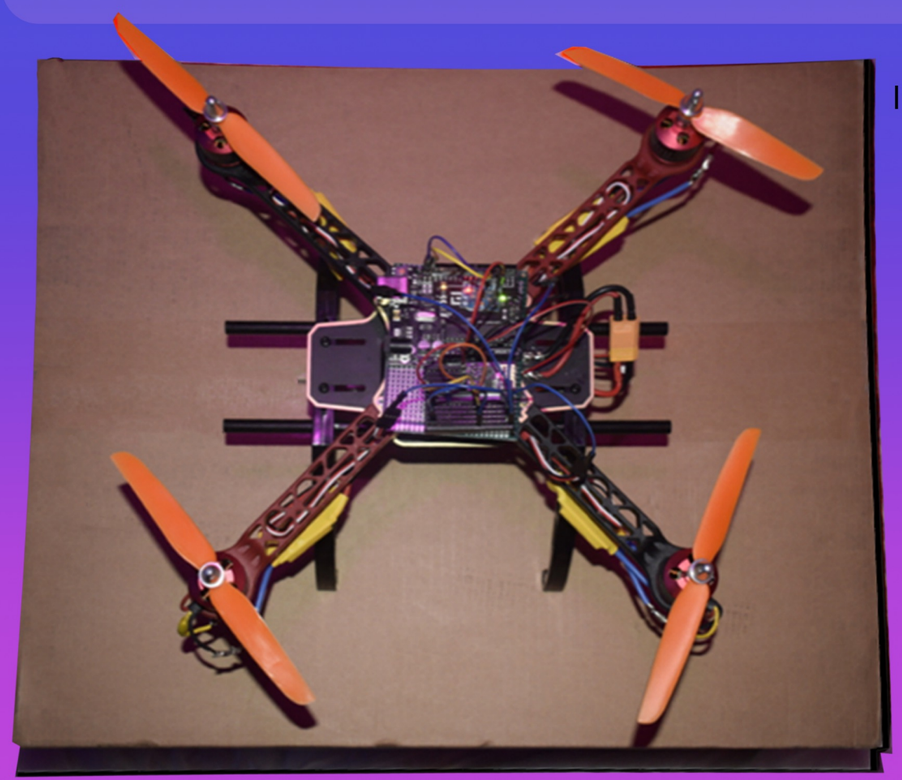
Aim:

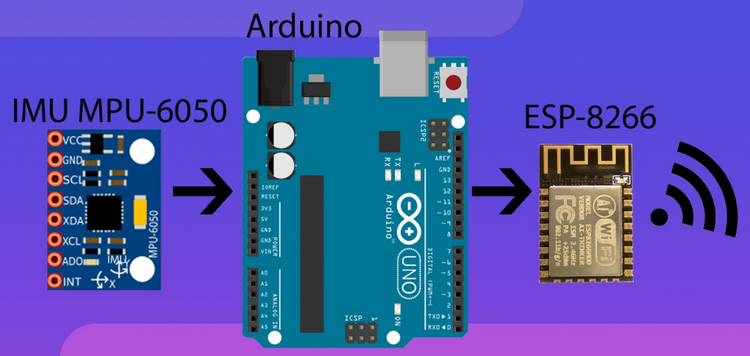
Develop a quadrotor UAV that is able to fly in an indoor/outdoor environment using an android app for control. The android app is able to send user instruction to the quadrotor, eg fly to this location, take-off.

Software

The mobile app is coded in Java and is the client while the Arduino is coded in C and is the server. The app sends instructions to the Arduino(via the wifi chip) to make the drone fly to specific locations and the IMU sends the accelerometers, gyroscopes data to the Arduino to keep the drone stable







Hardware:

The drone is assembled using a quad-x frame, 4 brushless motors, 4 electronic speed controllers, Arduino, IMU, wifi chip, lipo battery and 4 propellers.

Future Development:

Autonomous tracking function which enables the quadrotor to track a target autonomously via image processing