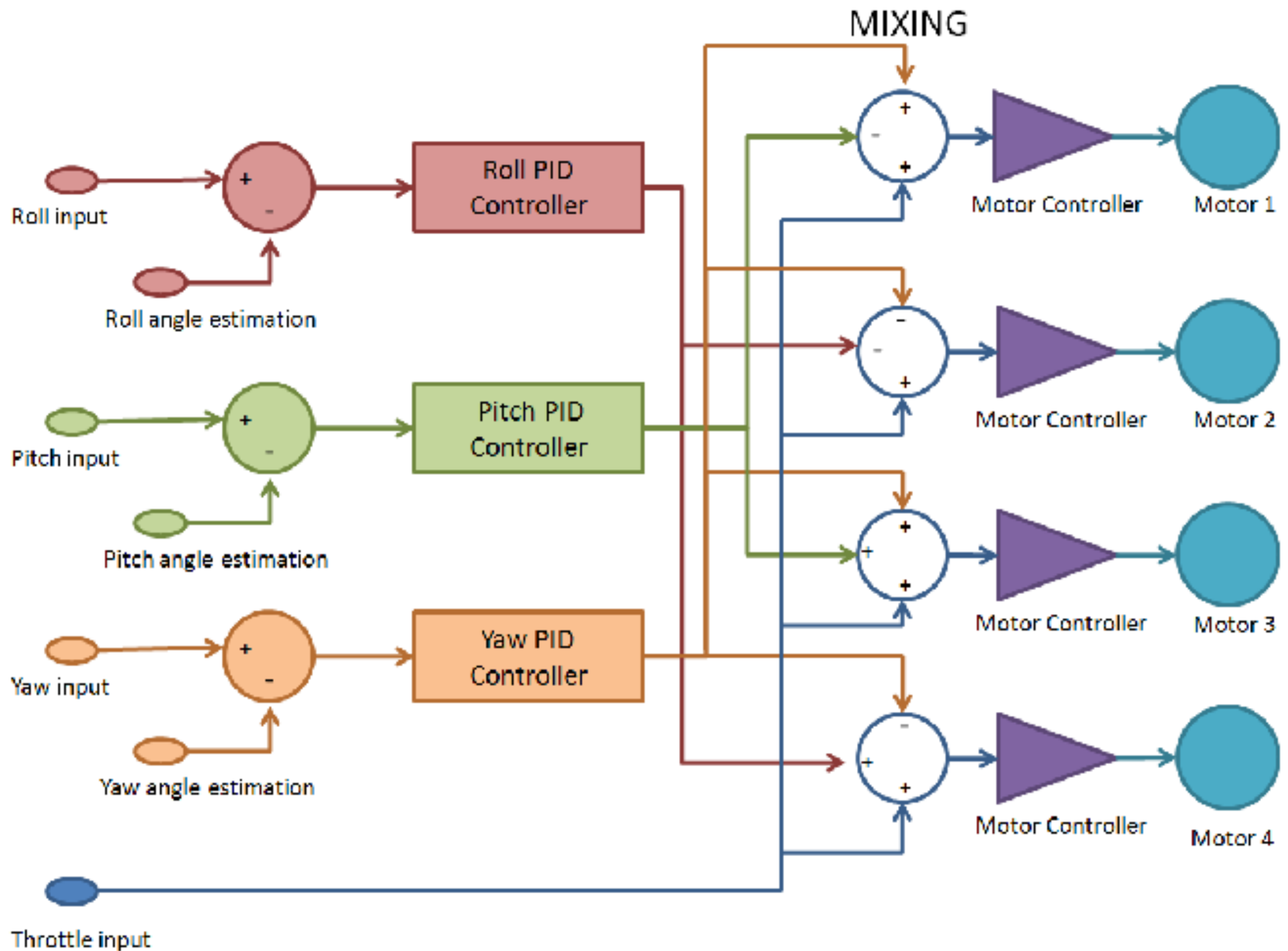


# Methodology

- Design of the UAV - After thorough design and simulations to arrive at a stable model with definite constraints.
- Design of the Single and Dual-Axis Tilt Rotor mechanism followed by 3D printing
- Design and Simulation of The Electronic and Electrical Circuit with Failure Safety and Power Management.
- Using Arduino Mega as a flight controller and NodeMCU for Real-Time Internet Connectivity and Control to the UAV.
- Use of Computer Vision for High Speed Obstacle Avoidance and Precise Control, AI for on-board power optimization and analytics and Genetic Algorithm for optimized PID.
- Using Sensor Fusion and On-Board Processors to achieve Full and Semi Autonomous Senses.



**PID Control System**