

Thesis Title	Attitude Tracking Control Using PID Controller in Quadrotor
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### Abstract

Nowadays, Quadrotors have been used for rescue missions, search missions, etc. This thesis studies a control system design for attitude control in a quadrotor. A comparison of PID and LQR control systems are carried out in both simulation and experiment. The feedback signals are measured using a gyroscope and an accelerometer to measure rotational angles of the quadrotor. However, the output signal from both sensors are not precise enough. Kalman Filter is then applied to improve the output from the sensors. The simulation and experiment results show that both PID and LQR controller have an ability to track the input signal, but the PID controller can work better in the sense that it does not require a system model in the design.

Keywords: Quadrotor / PID control / LQR control / Gyroscope / Accelerometer / Kalman Filter