

Machine Problem Set 1

Problem 2

1. Kalman filter update equations:

Time update:

$$\hat{x}_k^- = A \hat{x}_{k-1} + B u_{k-1}$$

$$P_k^- = A P_{k-1} A^T + Q$$

Measurement update:

$$\hat{x}_k = \hat{x}_k^- + K_k (z_k - H \hat{x}_k^-)$$

$$K_k = \frac{P_k^- H^T}{H P_k^- H^T + R}$$

$$P_k = (I - K_k H) P_k^-$$