

Huaheng Yu

Time Update:

$$\widehat{\mathbf{x}}_k^- = \widehat{\mathbf{x}}_{k-1} + \mathbf{u}_{k-1}$$

$$\mathbf{P}_k^- = \mathbf{P}_{k-1} + \mathbf{Q}$$

Measurement Update

$$\widehat{\mathbf{x}}_k = \widehat{\mathbf{x}}_k^- + \mathbf{K}_k(\mathbf{z}_k - \widehat{\mathbf{x}}_k^-)$$

$$\mathbf{K}_k = \mathbf{P}_k^- (\mathbf{P}_k^- + \mathbf{R})^{-1}$$

$$\mathbf{P}_k = (\mathbf{I} - \mathbf{K}_k) \mathbf{P}_k^-$$