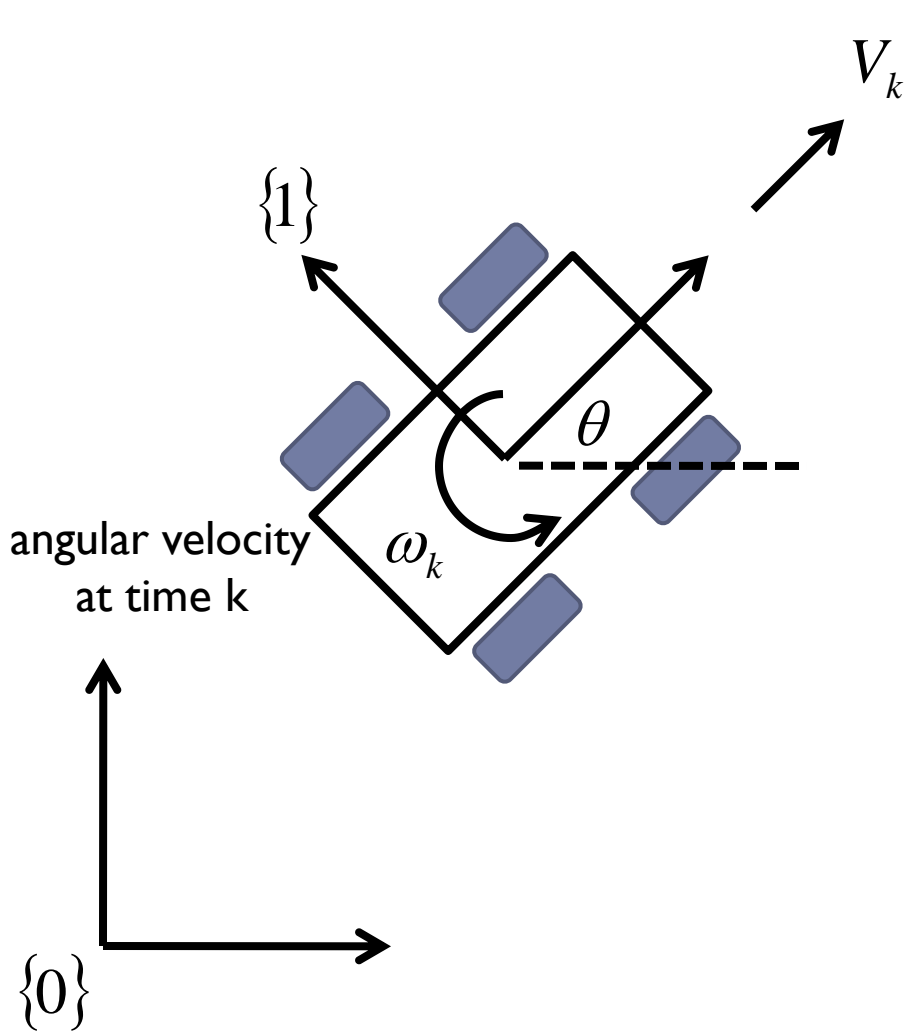


Day 21

Extended Kalman Filter

Simple Mobile Robot



forward velocity
at time k

“state”
pose in world
coordinates

$$x = \begin{bmatrix} X_k \\ Y_k \\ \theta_k \end{bmatrix}$$

“control input”
velocities in world
coordinates

$$u_k = \begin{bmatrix} V_k \cos \theta_k \\ V_k \sin \theta_k \\ \omega_k \end{bmatrix}$$