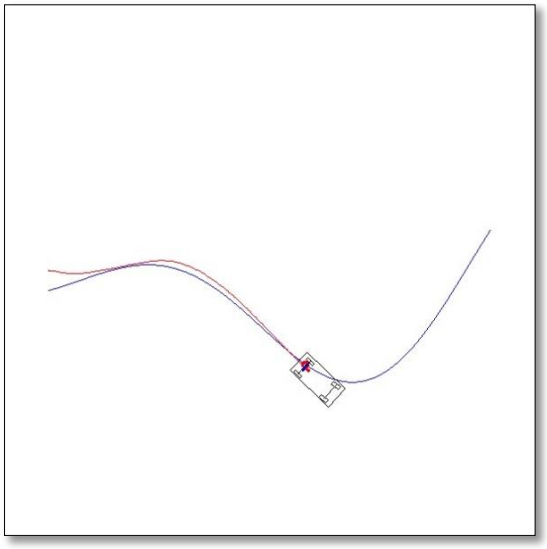
CS562000 Robotic Navigation and Exploration

Lab1 Kinematic Model & Path Tracking Control



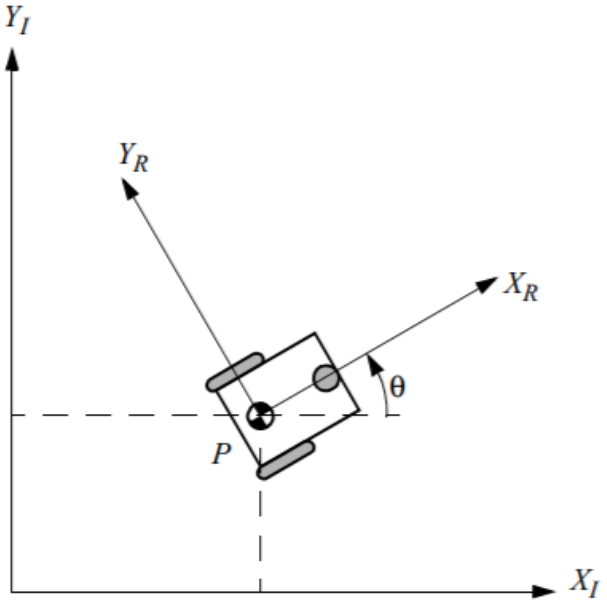
In class, we had taught some path tracking algorithms and for this lab we are going to put them into practical application.

Please do the following tasks:

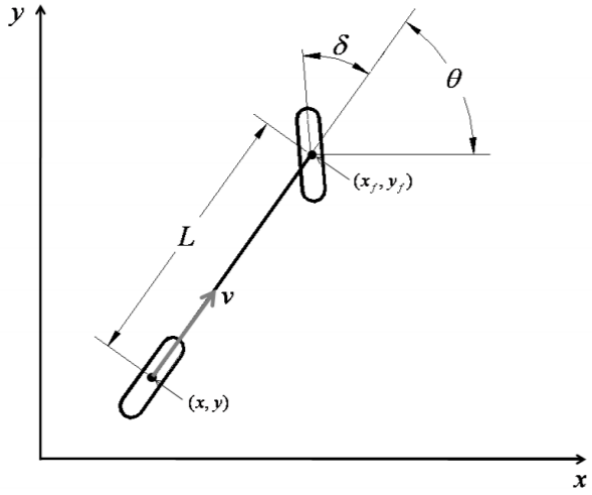
Function update in **class KinematicModel**:

The function update is to update the state in model which includes x, y, yaw

- wmr_model.py



- bicycle_model.py

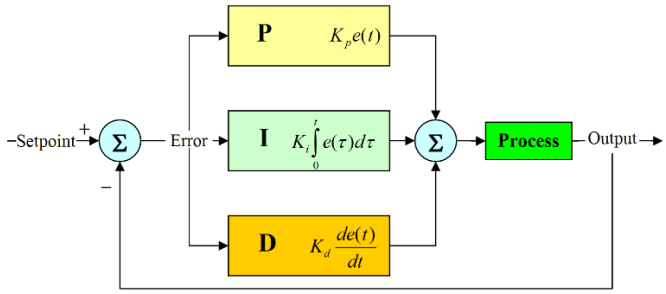


Function feedback:

The function feedback is to calculate the Angular velocity **ω** in wmr model or angle **δ** in bicycle model

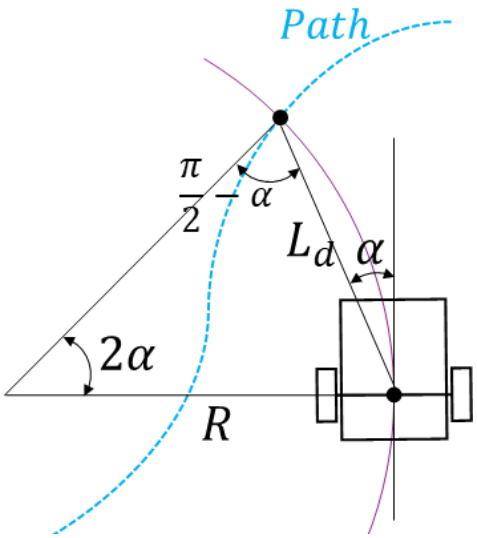
PID control:

- wmr_pid.py

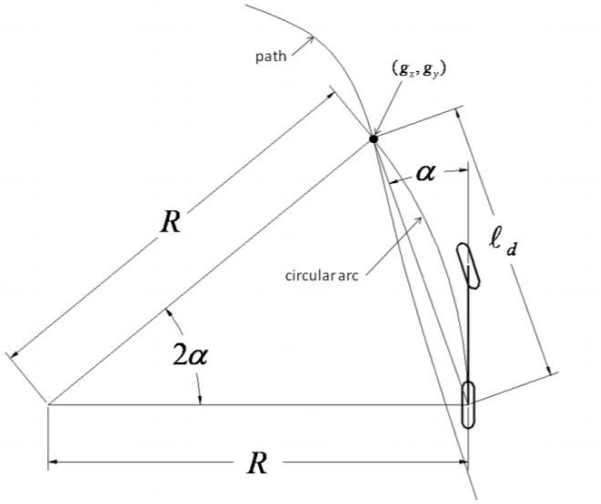


Pure Pursuit Control:

- wmr_pure_pursuit.py

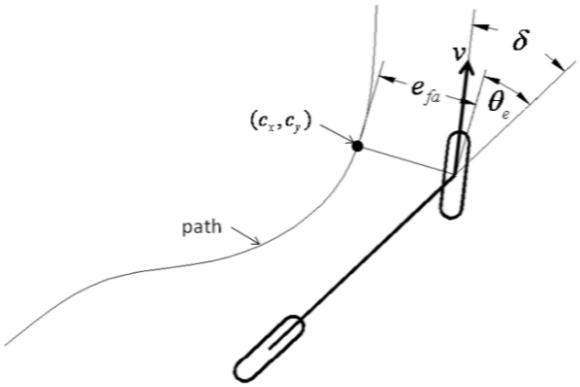


- bicycle_pure_pursuit.py



Stanley Control:

- bicycle_stanley.py



Your output should look something like this: https://ppt.cc/f6xfJx