Combined Control Flow

Nvidia Jetson

Return Actual Yaw

imu_yaw$_t$

X_t

Y_t

MPC

X_t

Y_t

Extended Kinematic
Bicycle Model
RK4 Computation

Yaw$_{t+1}$

X_{t+1}

Y_{t+1}

Feedback
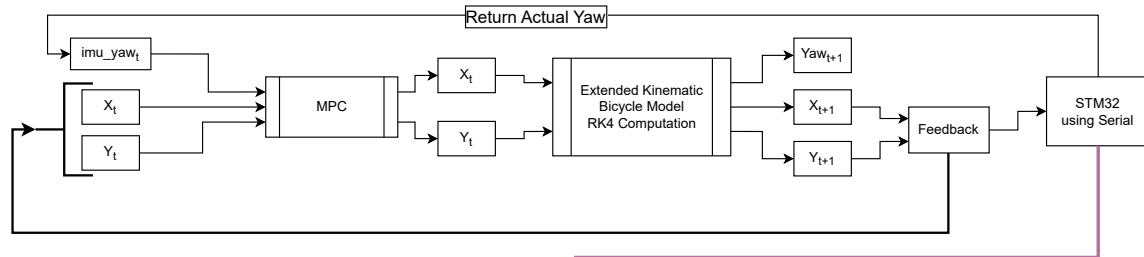
STM32
using Serial

Serial Port : 115
200

Legend
X_t : Speed of the car
Y_1 : Steering angle of the car
Yaw$_t$: Computed yaw of the car
imu_yaw$_t$: Measured yaw from BNO055
Kp : Proportional Gain
Ki : Integral gain
Kd : Derivative Gain

STM32

timeStep

currentSpeed

desiredSteer

Kinematic Bicycle
Model
Euler Computation
or
RK4 computation

yaw_calc

error

imu_yaw

Ki

Kp

Kd

currentSteer