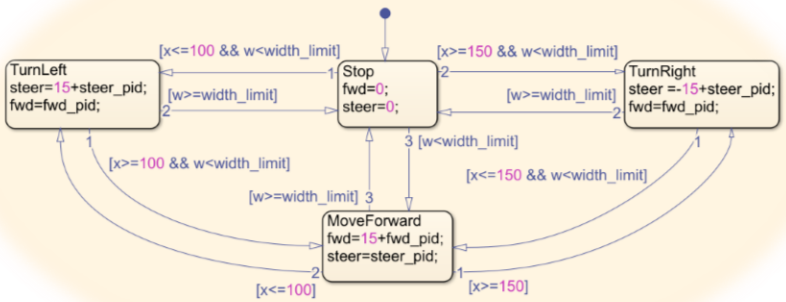
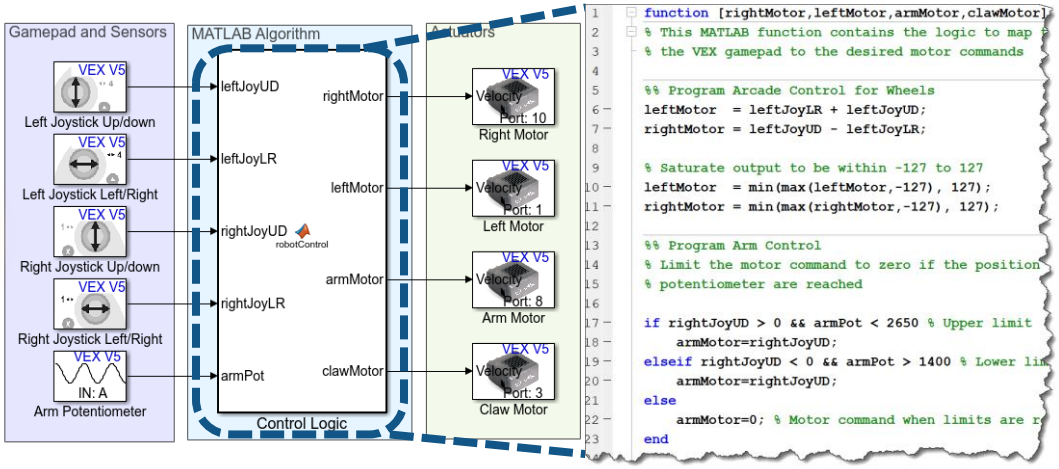
MATLAB and Simulink for BEST Robotics

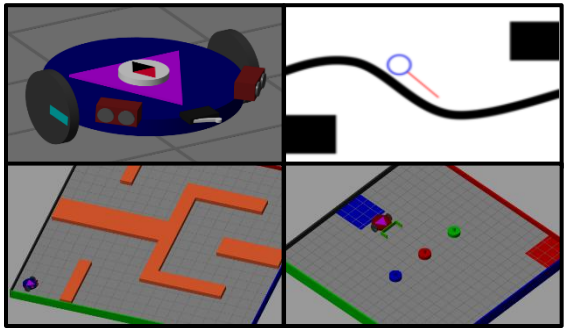
Flow Charts



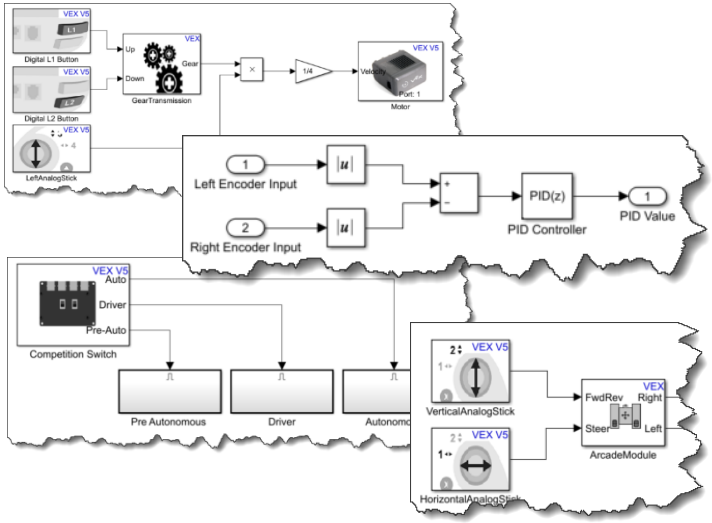
Graphical and Textual Programming



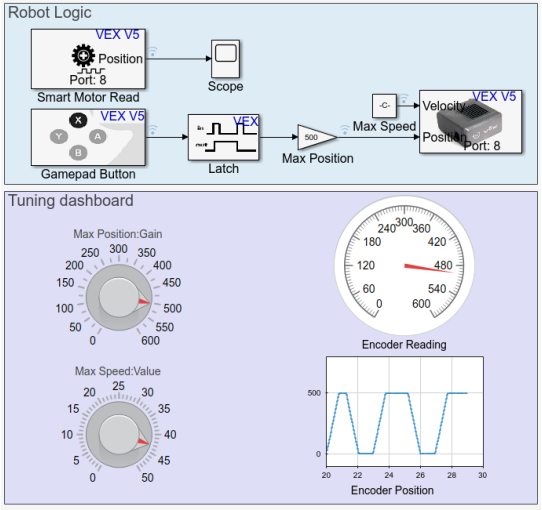
Simulations



Hardware and Control Libraries



Parameter Tuning and Visualization



MATLAB and Simulink BEST Robotics Getting Started Guide

Computer Setup

1. Request Free License
2. Install:
   - MATLAB and Simulink
   - VEX EDR Libraries
   - VEX Companion App

Software Ramp Up

1. Intro to MATLAB
2. Intro to Simulink
3. Intro to Stateflow

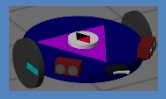
Robot Programming

Simulations

Mobile Robotics Tutorials

1. Autonomous Robot Motion
2. Use PID Controllers
3. Design Line Following Robots
4. Detect Obstacles
5. Navigate a Path

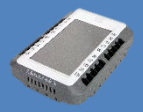
Robotics Playground



1. MATLAB Programming
2. Autonomous Robot Motion
3. Simulink Modeling
4. Driver Controls
5. Program Distance Sensors
6. MATLAB Functions
7. Intro to Stateflow Charts
8. Maze Solving Robot Project

Hardware

VEX Curriculum



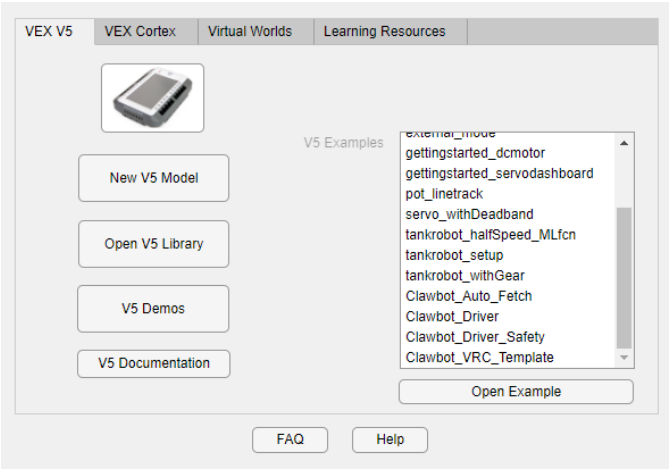
1. Autonomous Robot Motion
2. VEX Competition Template
3. Encoder Navigation
4. Program Distance Sensors
5. Use PID Controllers

Additional Video Tutorials

- Get Started with VEX EDR V5 support for MATLAB and Simulink
- Driver and Autonomous Control of VEX Robots
- Using Infrared Sensors for Robot Navigation
- Program VEX EDR V5 Smart Motors
- Robot Autonomy and Control Webinar

Documentation **Instagram**

VEX Companion



Questions? *roboticsarena@mathworks.com*