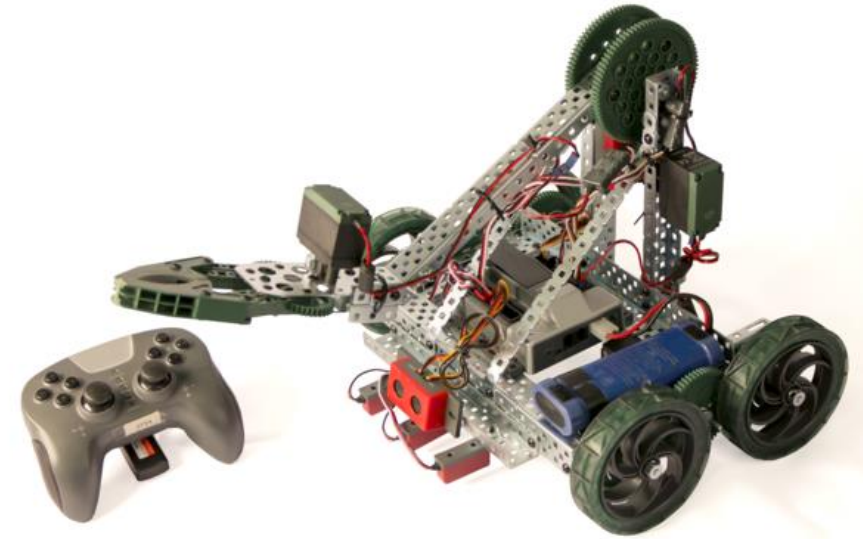# Introduction to VEX Hardware

By MathWorks Student Competition team
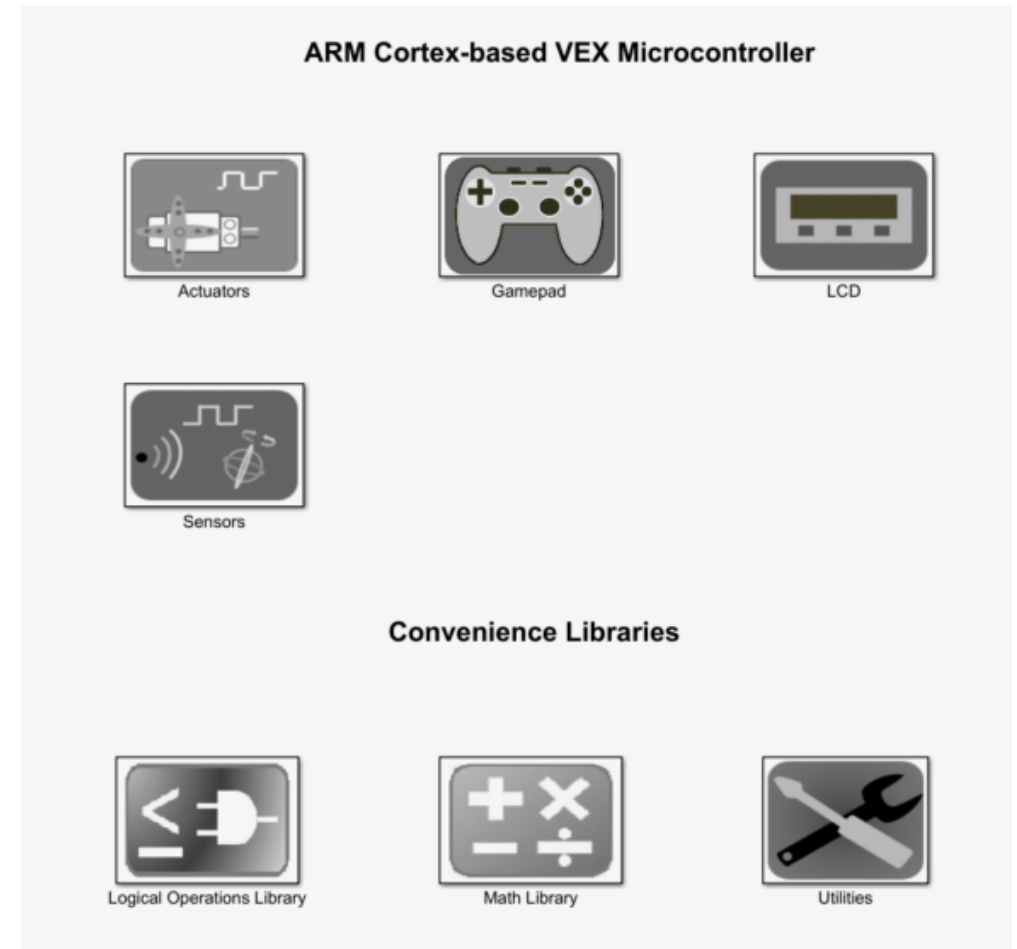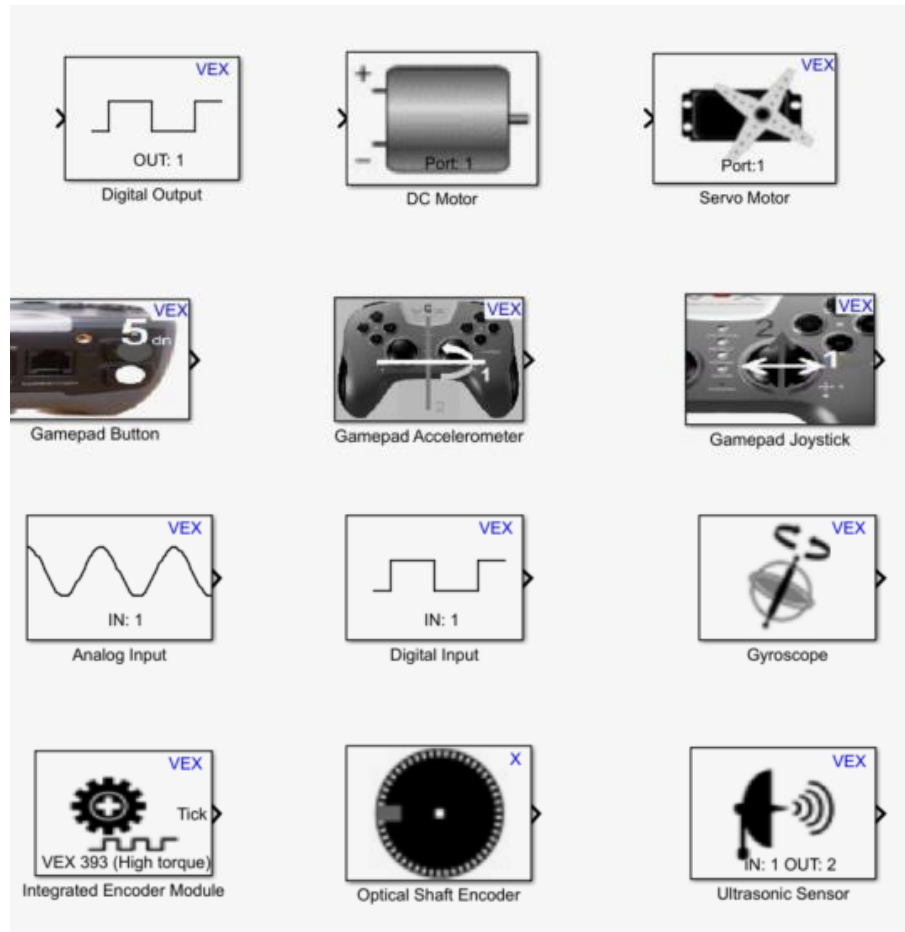
The Hardware – VEX EDR V5 and Cortex

- VEX Based Microcontroller (Brain)

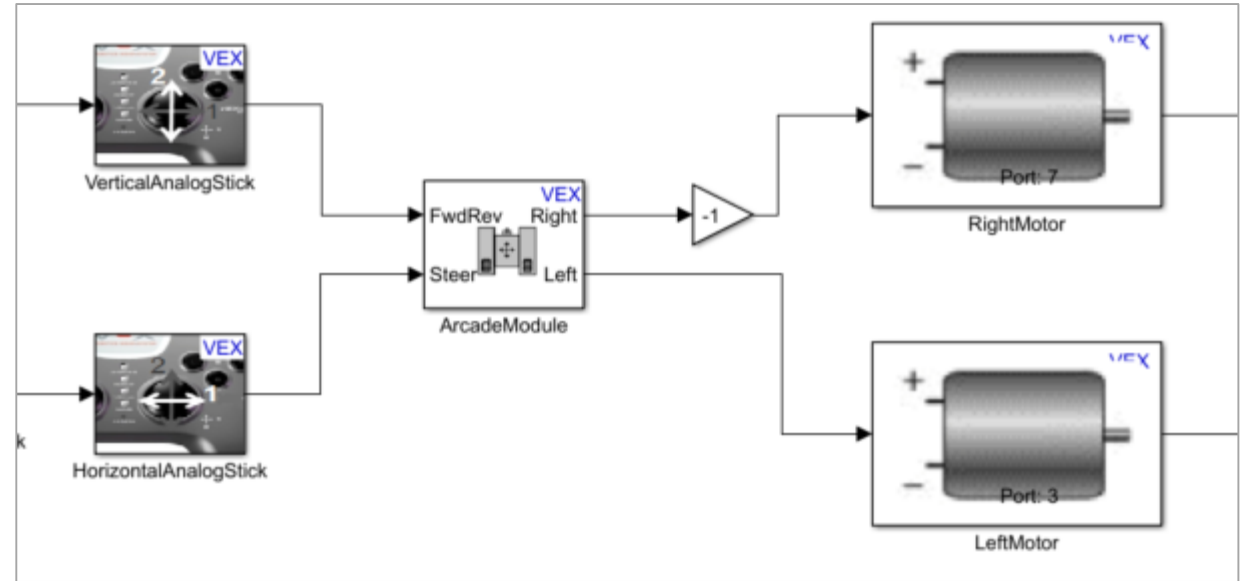- Gamepad Controller

- Actuators (Motors)

- Sensors

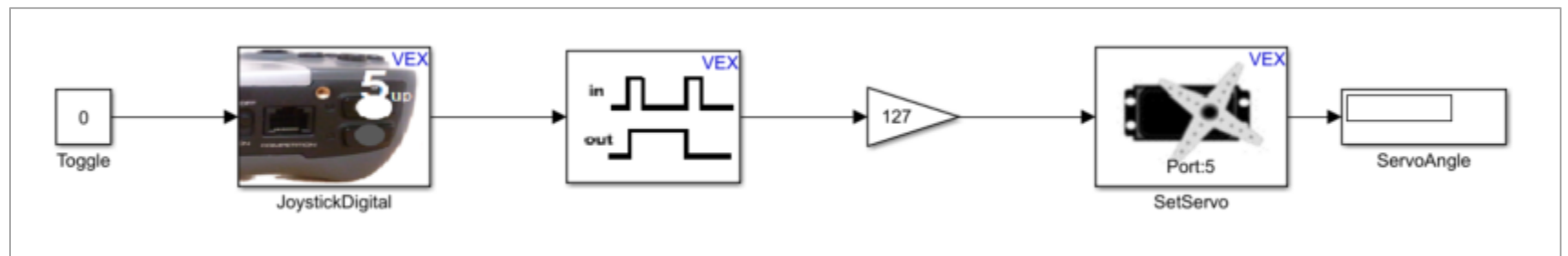# Simulink Library

- Blocks for all supported functionality

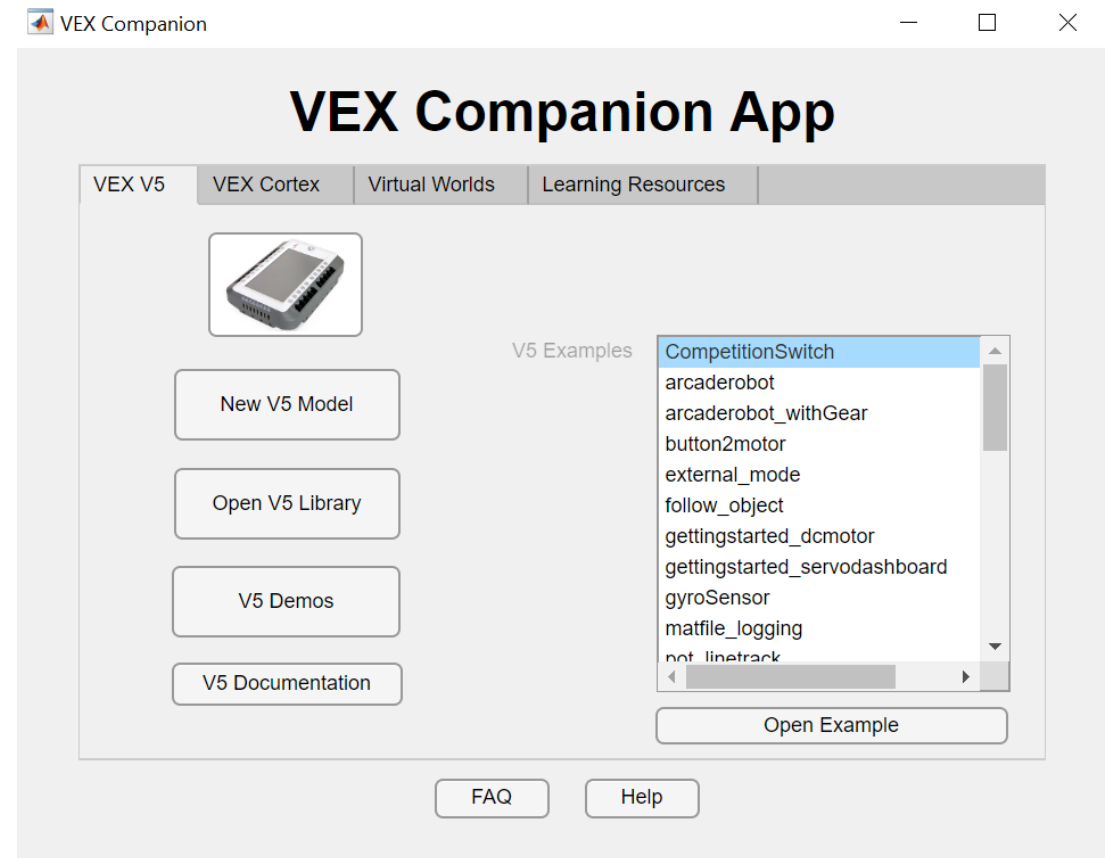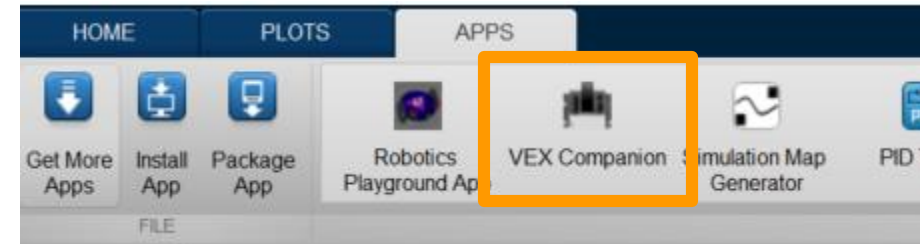# Examples using VEX Blocks
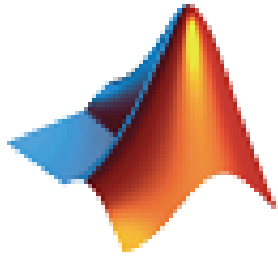
- **Arcade Control**

- **Single Button Motor Control**

VEX Companion App

- All Resources in one place

- Install after support package installation

- Extensive list of examples
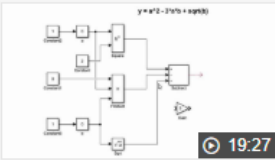
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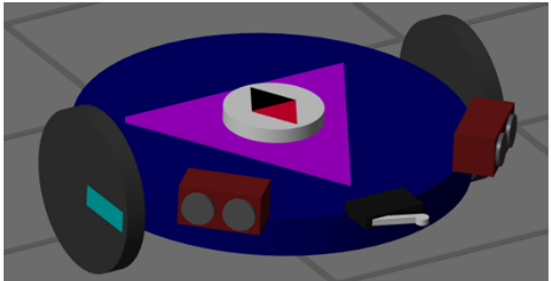
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Simulink virtual environments designed to aid in the teaching of basic concepts in mobile robotics
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The training materials in this video series will enable your team to get started with designing and simulating common mobile robotics algorithms in MATLAB and Simulink. You will learn how to design open and closed loop feedback control systems for your robot to perform tasks like dead reckoning, line following and obstacle detection. You will also understand how to use the custom simulation tools to test your algorithms within Simulink before deploying them to an actual robot.

- Part 1: Controlling Robot Motion
- Part 2: Using PID Controllers
- Part 3: Line Following Algorithms
- Part 4: Obstacle Detection Algorithms
- Part 5: Path Navigation

» See detailed outline

▶ 1:17

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Resources – BEST Robotics

- MathWorks Competition Webpage

https://mathworks.com/best-robotics

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https://www.mathworks.com/academia/student-competitions/best-robotics/simulink-award.html

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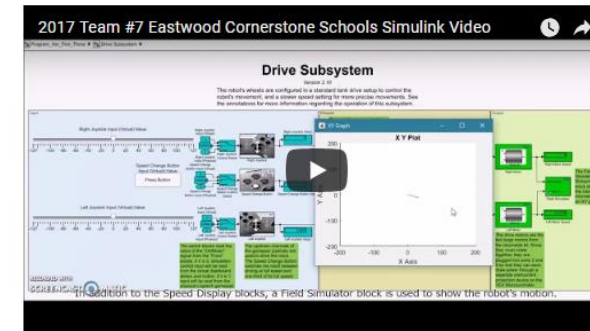http://www.bestinc.org/b_simulink_award.php