

Control Award Sponsored by Arm Submission Form

Please turn in this sheet during your judge interview along with your engineering portfolio

Team # 8696 Team Name: Trobotix

Autonomous objectives:

Score a single pre-loaded cone on a medium and/or high junction.

Park in the correct zone based upon the signal cone.

Sensors used:

Encoders (4) - Accurate driving and navigation. Distance Sensors (3) - Supplement encoder readings.

Magnetic Limits Switches (2) - Controls linear slide positioning. REV Color Sensor V3 - Read the signal cone.

Key algorithms:

Finite-State Machine - Control slide positioning without compromising the availability of other mechanisms. An inverse function is applied to the detected battery voltage to ensure the robot consistently moves at

Driver controlled enhancements: constant speed.

Automatic linear slide positioning using magnetic limit switches. Squared controller input to provide a more "natural" feel.

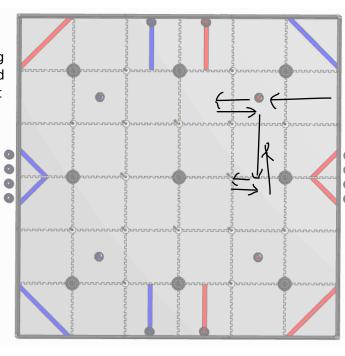
Engineering portfolio references:

Design § 4.a - Sensors

Programming § 1 - Autonomous Programming § 2 - TeleOp

Autonomous program diagrams:

Note: Sample autonomous route. Multiple routes are available depending on what side of the field the robot starts or what junction to score on.



- 1. Grabs pre-loaded cone.
- 2. Raises slide.
- 3. Moves forward.
- 4. Reads the signal cone.

(The read zone was #2.)

- 5. Pushes the signal cone away.
- 6. Returns to middle.
- 7. Strafes to high junction.
- 8. Moves to position cone above junction.
- 9. Releases cone.
- 10. Moves back.
- 11. Strafes to zone #2.