

The CATastrophe!

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Project Description

The goal of this project was to design and build a small autonomous vehicle that uses distance sensors and a servo motor to steer around an apartment or home while running away from cats, causing them to chase it, have fun and get exercise. I ended up making it so that the robot would run away from the cat or other objects should they get too close instead of running around at all times so that the interaction would be initiated by the cat, not in constant motion.



Technical Analysis

I used ultrasonic distance sensors for this project. They view a cone shaped range and work well with distances between 10 and 20 centimeters making them a good choice for the somewhat flexible goal of the project. I used DC motors with an H-bridge to power the vehicle and, while the mistiming of the motors gives the cat toy personality, it may have been better to use a stepper motor or to separate the motors on the H-bridge to avoid battery drain. The servo motor works well for steering but in the future I would use the H-bridge and motors to steer with a simple caster in the back. Overall the technical choices were fairly well considered but could be further refined to achieve a more dependable, albeit less personable, cat toy.

