The RC Circuit

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This project will use the Nexys4, a video camera, an RC car, and a hacked RC controller to solve and navigate through a user-defined maze. The maze setup will include laying out flat colored paper strips; above the maze, an overhead camera will capture an image of the maze. First, we want to implement a maze-solving algorithm on the FPGA. Second, we want to have the FPGA control the RC car wirelessly while using computer vision to predict collisions and avoid them during the car's traversal of the determined path. Our stretch goal is to implement real-time obstacle avoidance by constantly running a variation of our image-capturing and path-solving algorithm.