Self Balancing Voice Controlled Robot

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Abstract

Our team intends to build a self balancing, Segway-robot, that can respond to voice commands. The FPGA work of this project largely falls into two main modules, the self balancing and movement controller, and the voice recognition module. The self balancing controller will be implemented with a PID controller that takes measurements from an accelerometer and gyroscope. The voice recognition would be done by comparing audio received through a microphone to previously recorded voice commands (go forward, stop, turn around, etc). Mechanically, the robot would consist of two parallel wheels with a body between the wheels that rise up a few feet.