

Self-Balancing Ball-bot

My idea for a project is a self-balancing ball bot. This robot would operate under principles similar to that of the currently available Segway, except it would be unstable on an additional axis. That is, the robot would be susceptible to both pitch and roll, compared to only pitch. While it may seem like this would create an additional problem, the rewards, at least in my opinion, outweigh the risk. Control over an additional axis allows for greater control over the robot's movement. This would facilitate tighter turning and navigation of tighter spaces.

In terms of structure, the robot would have a central, spherical "wheel" over which the structure of the robot is constructed. If necessary for stability, the robot could also contain counterweights that protrude from the sides of the robot in order to have a "damping" effect on the robot's motion.

This type of robot could be used in a variety of ways, ranging from autonomous messenger services to personal transportation. If the already-available spatial awareness technology could be integrated with this design, the robot could serve as a messenger service for employees that work in large buildings. Designated locations could be mapped for the robot to drop off and pick up packages, and the robot could move along to its next designated spot. On a larger scale, these robots could be used similar to the way Segways are currently used – for personal transportation. They would allow greater agility and would be able to navigate tight spaces more efficiently.