**Audibot Urban Navigation**

**Abstract**

With the use of GPS sensor data, it is possible to navigate an autonomous robot through a series of checkpoints in an open field. Completing a task such as this can prove capability of an autonomous robot however simply navigating an open field has limited applications. In a real world application, there are paths or roadways that must be followed in order to get from point A to point B. Navigating from point A to point B in the shortest possible route will be the primary objective of this study. In order complete this task, a camera detection system will search for the lane markings to keep the vehicle in the intended lane. Then controllers will need to be developed to plan the most efficient path. For this path planning, we intend to use principles from the traveling salesperson problem in order for the robot the find the most efficient path while building the code for the controllers and logic within them. At the conclusion of this study, the robot should be able to autonomously navigate the roads in a simulation regardless of the start location and the target location.