

Autonomous Cargo Trailer - Following Electrical Vehicle (FeV)

Status: Filled

Group Members: Rik Li Bowen Li Tran Xuan N Le, Han Feng Zhu

Sponsor(s): Mazdis Innovation Inc.

Supervisor(s): Farid Golnaraghi, PhD, PEng, Professor/Director,

The proposed project is a fully autonomous robot cargo. Human takes control of the main, lead robot (leader). Another following robot is driverless, with autonomous system guiding that to follow the human in the lead. The objective is for the robot to autonomously follow a leader while detecting and avoiding any obstacles in its way. It has sensors that track the leader, so that it follows them automatically along their route. Different basic trajectories consisting of curves, turns, roundabouts, and changing lanes in a confined space will be designed for this purpose. The electrically powered robot is also capable of operating autonomously in a mapped environment, so it can perform deliveries and pick-ups on its own.

For this project an iRobot Roomba will be used. Additional equipment might be added the iRobot, such as Webcam, Radar, Ladar, sonar sensors, new encoder, etc., and the existing logic controller might will be reprogrammed to