

Autonomous Robot Tour Guide

Commercial mobile robots are fast becoming a reality. Robots such as Pepper [1], Sanbot [2], Asimo [3], and others [4] [5] [6] represent the potential future for commercial robotics. These autonomous robots are capable of operating in uncontrolled environments (supermarkets, hotels, conventions) and interacting with customers. However, there is currently a gap in this market for a mobile commercial robot that can operate outdoors and interact with customers.

Outline of Project Outcome

We intend to develop a robot that can autonomously navigate an uncontrolled outdoor environment. Such difficult conditions (variable lighting, challenging terrain, and dynamic obstacles) will require an advanced and well-executed navigation system combined with dependable mobile robot platform, in order to achieve robust autonomous navigation.

Outline Applications for the Robot

With that said, the potential commercial applications of a fully realized consumer version are vast.

- * Public and private events: Such as conventions, forums and exhibits. Serving as a guide, hospitality aid, or entertainer.
- * Museums, theme parks, gardens: As a tour guide, and information point.
- * Company headquarters: To provide tours of offices and facilities to clients and guests, providing information about the company and its products & services.
- * Shopping malls & supermarkets: As an in-store greeter, information point, capable of leading the customer to where they need to go.
- * Restaurants and parties: As a drinks & canapé waiter. The robot would need to be fitted with a tray and be capable of keeping it stable.

To that end, we will be targeting an example commercial application as one of the main objectives of our project; a robot capable of serving as a tour guide for the University of Plymouth campus, by leading a group of prospective students and parents around the campus, and to provide information about the buildings.

- [1] SoftBank Robotics, "Pepper Robot," 10 October 2018. [Online]. Available: <https://www.softbankrobotics.com/emea/en/pepper>.
- [2] Sanbot, "Sanbot Robot," 10 October 2018. [Online]. Available: <http://en.sanbot.com/index.html>.
- [3] Honda, "Asimo," 10 October 2018. [Online]. Available: <http://asimo.honda.com/>.
- [4] SMP Robotics, "Robot Guard," 10 October 2018. [Online]. Available: https://smprobotics.com/application_autonomus_mobile_robots/robot-guard/.
- [5] Suzhou Pangolin Robot Corp., "Robot Catalogue," 10 October 2018. [Online]. Available: <http://en.csjbot.com/>.
- [6] ASUS, "Zenbo," 10 October 2018. [Online]. Available: <https://zenbo.asus.com/>