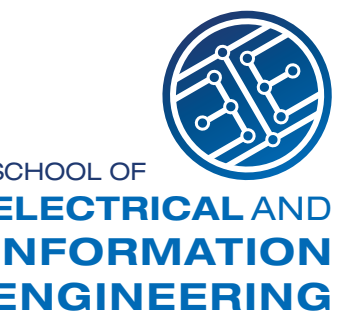




PARKSMART - AN IoT PARKING SYSTEM FOR A SMART CAMPUS

JARED PING & LARA TIMM SCHOOL OF ELECTRICAL & INFORMATION ENGINEERING, UNIVERSITY OF THE WITWATERSRAND



INTRODUCTION

The Internet of Things (IoT) is the interconnection of everyday objects, via embedded computing devices and the internet, for the purpose of sending and receiving data.

An IoT parking system enables the availability of parking spaces to be communicated to a user via a mobile application, reducing time and fuel spent searching for a parking space on a daily basis.

OBJECTIVES

- Develop a system which can accurately and reliably communicate parking availability in real time
- Provide the most cost effective solution possible
- Keep the system energy efficient, increasing operational time on a single battery charge
- Make the system scalable to accommodate any parking lot size
- The system should be robust and easy to maintain
- Communicate data through a user-friendly mobile application, built using the Android framework

SYSTEM DESIGN

Features

Hardware

Software

(mesh network flow diagram)

SYSTEM DESIGN (CONT.)

DEPLOYMENT & EVALUATION

FUTURE WORK

- An alternative row administrator node row is established if any of the current row administrators go down, allowing negative effects to be dramatically decreased.
- Allow sensors to take multiple consecutive readings, use this information to distinguish between the type of object being sensed. This will avoid false positives from pedestrians or other objects crossing the sensor path temporarily.
- Small application updates, including the option to manually refresh the parking lot page

CONCLUSIONS

A prototype IoT-based smart parking system has been designed which communicates parking availability to

REFERENCES