

# Investigating a new system for collecting and validating crowd-sourced geodata

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**Abstract:** With the help of new technologies such as GPS-enabled devices and online maps, almost anyone at any level of expertise can voluntarily participate in creation of geographic information. While many tools are developed to harness the power of crowd-sourced geodata, the quality and currency of collected information is at question. At the same time finding and engaging new volunteers to increase the speed of collection is challenging. In this research, we will study and develop a new collection system which could attract more people and validate the data accurately. The result would help us to satisfy governmental agencies to use such methods to collect new geographical information in future.

## Introduction

In recent years, the advances in positioning, web mapping and communication technologies has changed the traditional methods of collecting, updating and maintaining geographical information. Distributed people can voluntarily participate in the process of creating and updating geographic information. OpenStreetMap, Wikimapia and Geograph are among tens of successful initiatives towards this aim. There is no doubt that a collaborative work could result in quick information updates, however validity of the contributed data is at debate.

On the other side, most governmental and professional agencies who are involved in processing and maintaining geographical information are encouraged to deal with authoritative data which is mainly collected and manipulated by professional and trusted sources, with their own supervision. Sometimes the authoritative data is the only available resource for legal dispute resolutions for claims such as land ownerships and political administrative boundary.

There are also different categories of geographical information which governmental agencies would flag them outside of their main business so they do not allocate resources to collect and maintain such data while this information could be extremely valuable for citizens.

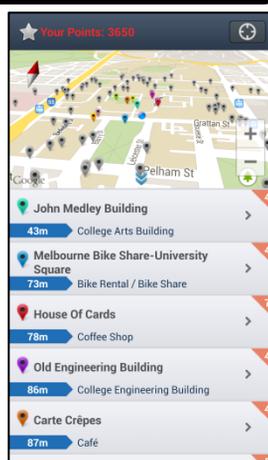
## Research Challenge

As mentioned earlier, while the quality of participatory geodata is still at debate, finding and engaging volunteers is also laborious. In this research we mainly focus on developing a new system using fine methods and algorithms to address validity, uncertainty and currency of the contributed data. We will also consider the engagement factors to have more contributors.

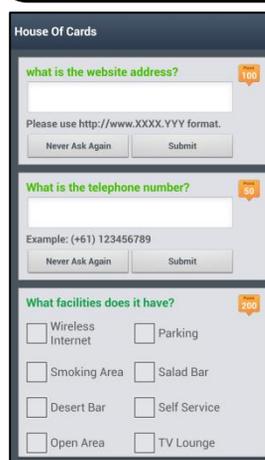
To study the above requirements, a new mobile game (RoadPlex) is developed which players should answer to questions about nearby locations which are identified by mobile GPS. For each successful answer the players earn points. As of today (October 2013) more than 2000 questions are answered by 400 players. Below figures depict the interface of RoadPlex.



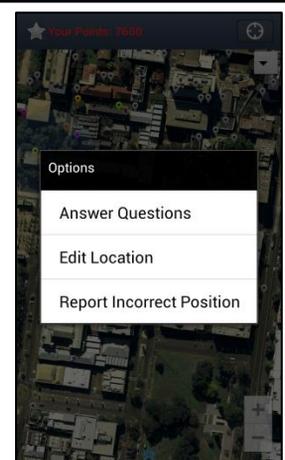
Login Page



List of Nearby Venues



Questions Page



Edit a Location