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User activity recognition on mobile clients for Smart Public Transport Services

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Abstract

In the field of smart city mobile applications based on crowdsourced data, the automation of the data collection process is a substantial requirement. Continuous user interaction can not be expected and feedback heavy solutions can discourage the masses from participating. Luckily, the currently available mobile devices already carry the sensors we need and large number of developer tools are at our disposal to overcome this issue. Mobile sensors can provide two important information we can benefit from: the user's location and the user's activity. On a large scale the sensory data may vary due to the diversity of the devices, thus reassurance from the user and strict supervision of collected information can not be neglected. Although a great number of solutions already had come to realization regarding user activity recognition, they usually serve as stand-alone solutions as they are not bind to solve a specific problem. In urban environments these solutions carry a great potential. In this paper we would like to share our experiences in user activity recognition, present a sensory module implemented using the latest Google API-s for Android platform and how can it function as a valuable asset of a Smart Public Transport Service.

Keywords: Smart Cities, Public Transport, Crowdsensing, Participatory Sensing, User Activity Recognition