

## Urban Computing Applications

Cities are becoming more digital and interactive, opening the way to the paradigm of urban computing. A typical example is the deployment of RFID tags in different places of the city such as sidewalks and crosswalks and the interaction that the underlying infrastructure allows between the city and the people. A distinguishing factor and additional challenge in urban computing is its scale. Unlike in other ubiquitous computing scenarios such as the home or the office where significant research progress has been made, urban computing typically involves a large number of: users, physical environments, and interaction devices.

The main objective of this thesis is to explore urban computing applications and propose a conceptual, architectural, and software framework for developing such applications. In particular, this thesis will:

- study existing deployments of interactive systems in urban scenarios, from simple crosswalk systems to sensors and other urban computing applications;
- factor in the different architectural components of the existing applications to come up with an initial framework for urban computing;
- understand how virtual world environments such as Second Life can help explore and validate urban computing applications;
- propose and deploy a number of urban computing applications in the virtual environment;
- update the framework with the results of the deployment in the virtual environment.

This work is the subject of a collaboration with a Computer Science professor at UC Irvine and visits to Irvine may be possible.

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