

MAP-I PhD Proposal::Digital Footprints for Situated Systems

Data about users and their actions is increasingly becoming “the business model” for the web. Sites like amazon do not just sell books. They build on user-generated data to sustain essential parts of their service, such as recommendations, user reviews, and rankings. In particular, the user click is the enabling moment for many of the technologies at the core of web economy, such as google adwords that allows small sites across the world to obtain financial income by routing their readers to sponsored links.

Situated displays are an emerging technology that creates a ubiquitous presence of digital visual information in our physical world and extends the presence of many web services to various situations of our everyday life, enabling brief encounters with information that is relevant for those specific situations. The need for information about people and their usage patterns is equally important in order to make them more driven by their real usage. However, situated displays represent an entirely different type of system, where the interaction context is much more limited, user generated information is much more difficult to collect and there are no keywords ready to be harvested from a search engine. Despite the fact that the approaches used on the web are not directly applicable to situated displays, the concept of classifying displays based on user generated data is still valid and a model to support it would be highly relevant. Several sensing and interaction mechanisms, such as SMS, Bluetooth, NFC or touch-sensitive screens, can be used to promote user engagement and, as a result, the generation of digital footprints that could be leveraged to characterize the situation or associate particular user actions with specific services.

Objectives

The objective of this thesis proposal is thus to develop a model for characterizing the usage of public displays by exploring the digital footprints implicitly or explicitly generated from multiple interaction and sensing modalities associated with those displays. Research includes the realization of field-trials, possibly within Living labs, for collecting data and evaluation, the design and implementation of a prototype service to sustain the work and the definition of appropriate classification procedures.

The results of this work can be very relevant in defining global solutions for advertising and content management across networks of public displays. This work is part of the research program on situated displays which provides an important framework for this research by facilitating the creation of prototypes and real-world deployments. This work is also sponsored by Ubisign a spin-off from UMinho that produces technology for situated displays and, if appropriate, is available for supporting a grant application for this work.

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