StoneSoup: Community Sharing of Social Media Streams

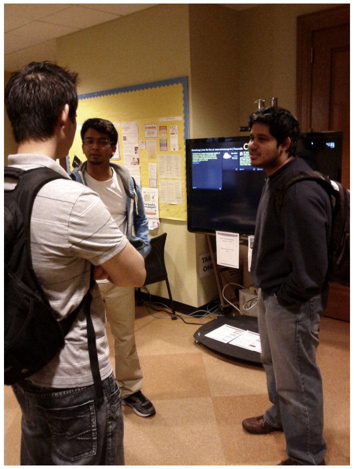

Figure 1: StoneSoup users engaging in social interaction in front of the display.

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Abstract

Community displays facilitate interaction and increase awareness in collocated communities. In this work, we designed and developed a community driven proactive display system that detects the nearby users and allow its users to personalize content for the display. We have used findings from existing literature to create a community display system that is well-suited for an existing student community. Moreover, we expand the design space for proactive community displays to reduce the burden of updating content, provide greater realtime control, and allow greater exploration of community content and community members.

Author Keywords

Proactive displays, interactive public displays, collaborative configuration

ACM Classification Keywords

H.5.3 [Group and Organization Interfaces]: Collaborative computing

Introduction

Community displays are found in many different social and temporal contexts. They serve the needs of a collocated community by increasing interpersonal awareness, build social relationships, and promote media sharing in their

User Scenario

To understand our design goals for StoneSoup we describe the following user scenario which is similar to one we came across during our initial pilot testing- a student Bob enters the student lounge where StoneSoup is deployed. As Bob walks past the StoneSoup display, he glances at what his friends nearby have shared on StoneSoup. He finds himself interested in a post about “Special Bicycles”. Being an avid bicycler himself, Bob seeks Kate, the creator of the post, to know more about these bicycles.

Inspired by Kate’s use of StoneSoup to share her unique interests, Bob decides to use StoneSoup to share his interests in mountain biking and wildlife photography by sharing his flickr feed with others.

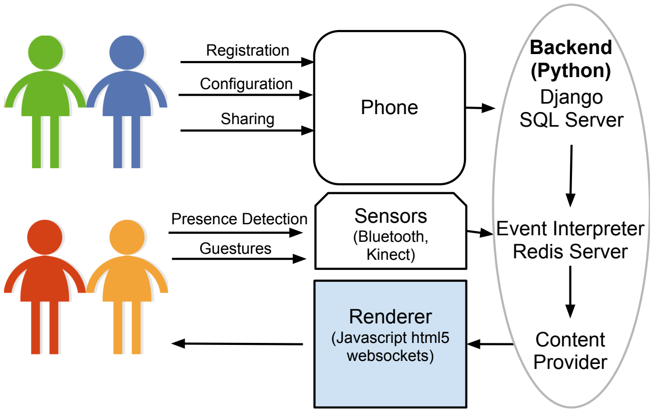


Figure 2: The flow of information between the users, mobile application, the backend server and the public display.

communities. Research has provided many design guidelines and highlighted the importance of the community when deploying such displays. [3, 6].

One challenge with public displays has been to make them more contextually appropriate. Proactive displays utilize sensors to detect the presence of people [8] and encourage participation from the community, ameliorate privacy concerns, and mesh with existing norms of the community [8, 2]. We have designed a proactive community display that can sense who is nearby and show online content streams, filtered and selected by the community. Adding proactivity to the community display suits the needs of a medium sized community by being adaptive to the dynamics of the physical space. The goal of the proactive display is to increase social interaction in the space it is deployed in.

In this paper, we base our work on the established guidelines set by previous literature and make significant improvements in particular aspects of community displays- 1) Reducing the burden of updating content on the display by using social media streams. 2) Providing greater real-time control by allowing users to quickly choose from a wide range of content types (for e.g. facebook, flickr, RSS feeds, etc.). 3) Allowing greater exploration of community content and community members by integrating novel social discovery mechanisms.

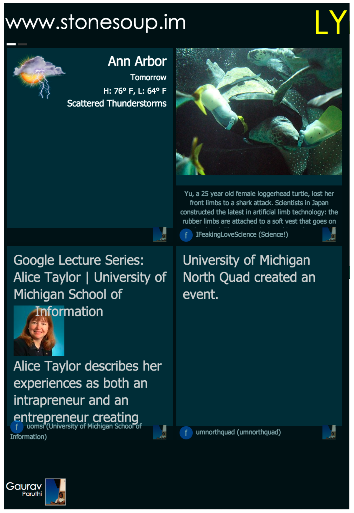
One drawback found in sharing content on systems like C3C and Plasma Poster was the lack of mechanisms to ensure freshness in the content being shared [7]. For systems like AutoSpeakerID and Ticket2Talk that dynamically change content based on the context, its easy to imagine that the content would go ‘stale’ quickly in long term engagements [8]. To solve this problem, our designs of StoneSoup embed the ideas of content freshness offered by online streams such as Facebook, Twitter, Flickr, etc. within them.

Design Goals

StoneSoup is targeted at community spaces that serve the goal of increasing social interaction and hence building a stronger and more cohesive community. In the following section we identify the underlying assumptions in making a hypothetical user scenario (See sidebar) as smooth as possible. Our designs for StoneSoup target the scenarios of content creation, sharing, and appropriation. Furthermore, we have devised social translucency mechanisms [4] via which users discover content and notice the visibility of actions.

Getting started with StoneSoup

A user registers on the system by opening the StoneSoup web app on any capable device. The user can checks-in


www.stonesoup.im

LY

Ann Arbor
Tomorrow
H: 76° F, L: 64° F
Scattered Thunderstorms

Yu, a 25 year old female loggerhead turtle, lost her front limbs to a shark attack. Scientists in Japan constructed the latest in artificial limb technology: the rubber limbs are attached to a soft vest that goes on

IFeakingLoveScience (Science!)

Google Lecture Series: Alice Taylor | University of Michigan School of Information

Alice Taylor describes her experiences as both an intrapreneur and an entrepreneur creating

uomsi (University of Michigan School of Information)

University of Michigan North Quad created an event.

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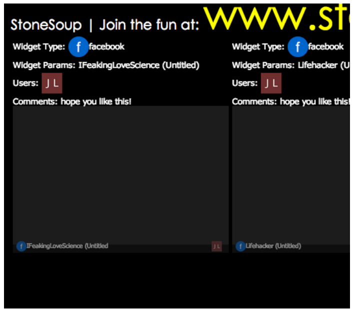
Gaurav Paruthi

Figure 3: The StoneSoup Display provides a tiles based view for the widgets. The checked-in users are shown on the top-right of the display. Widget allows interactivity via the mobile application and Kinect sensors.


StoneSoup | Join the fun at: www.st

Widget Type: facebook
Widget Params: IFeakingLoveScience (Untitled)
Users: J L
Comments: hope you like this!

IFeakingLoveScience (Untitled

Widget Type: facebook
Widget Params: Lifehacker (U
Users: J L
Comments: hope you like this!

Lifehacker (Untitled)

Figure 4: Information view of the renderer is triggered by gestures. It shows detailed information on each widget including the contributor, comments, and widget information.

either automatically using bluetooth or manually by pressing the check-in button. Immediately, StoneSoup fetches the content and configuration of newly checked-in nearby users from the database, processes and displays it on the StoneSoup display.

Renderer
The StoneSoup renderer (Fig. 3) shows the currently checked-in users at the bottom of the screen and their configured content in the center. This content is shown in a tile based layout, where each tile represents a widget (details below). On the top, the renderer displays the url where new users can join StoneSoup and a passcode for users to check-in manually.

Configuration
A widget on StoneSoup can be further configured on a range of parameters that depend upon the widget type. Widget types include Flickr, Facebook, Twitter, Redit, RSS feeds, Weather and Yelp. This list will grow as we discover other content types that are useful to a particular StoneSoup community. Widget parameters define the source, filters and the visual properties of a widget. For instance, the twitter widget can be specified by its source-hashtag or username, filters- how recent the tweet should be (within one day, last 10 days, etc) and its visual properties- size, number of tweets (See Fig. 5).

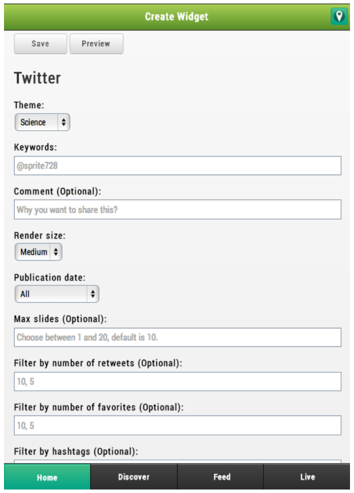
StoneSoup Interactions

A user can interact with the renderer via hand gestures while standing in front of the display. Swipe gestures smoothly transition the renderer to different screens of the renderer (Fig. 3). These screens are automatically created by StoneSoup as the screen space of the first screen fills up. The hand raise gestures allow users to view more information about the widgets on the screen (Fig. 4 or freeze the renderer in case they want to actively read something.

Social Configuration
In the case of public displays the results of a configuration are visible on the screen to nearby users, and hence has a physical presence. This situated and visible nature of the configuration enables users to observe the results of a configuration change.

Configuration changes represent a move towards a presumably preferable configuration. To support communication and collaboration between users to reach preferable configurations, we have devised social translucency mechanisms for discovering configurations, making visible the configurations and actions, and allowing users to browse the history of configuration.

Discovery of configuration
StoneSoup allows two ways for users to discover content on the display. First, information on each widget identifies its content and its creator. This information can be expanded even more by using the "Left Hello" gesture. Secondly, they can discover content on the mobile web interface by viewing the "Live" tab (Fig. 6) that displays the widgets that are currently present on the display. A user can then perform the corresponding action of either browsing the content on her personal device or copying the widget to her set of widgets. On the discovery view, A user can further filter the results to show only the checked-in users and the widgets or themes that are contributed by checked-in users. Furthermore, the user can press on a given result (user, widget or theme) to further navigate and perform an action to copy a widget to her set.



Twitter

Theme: Science

Keywords: @sprite728

Comment (Optional): Why you want to share this?

Render size: Medium

Publication date: All

Max slides (Optional): Choose between 1 and 20, default is 10.

Filter by number of retweets (Optional): 10, 5

Filter by number of favorites (Optional): 10, 5

Filter by hashtags (Optional):

Figure 5: Widget configuration view

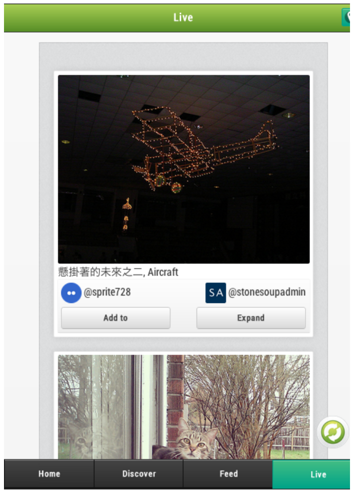


Figure 6: Live interface showing the widgets shown by the StoneSoup display on the users mobile.

Visibility of configuration

Appropriating content for community displays can be seen as "information staging" [3], where the display is a public stage on which each user is represented by the content they share. Our design for the appropriation of content supports this aspect and tries to prevent unintended representations. As the StoneSoup display maps to the front stage of Goffman's analogy [5], the web interface provides a "backstage" feature that allows users to test widgets on their local system before sharing it with the community. Users can create their set of widgets and then press the "Preview" button (Fig. 5). In this mode, a local renderer opens up inside the users' web browser, where users can look at the results of their configuration to anticipate the actual widget on the display.

Visibility of Actions

A user can interact with a configuration in many ways. Configuration related user actions are relevant in understanding how a given state of StoneSoup display was reached. The news feed interface provides a time sorted list of events related to which a user checked-in or checked-out and which widget was enabled or disabled. These actions give an understanding of how the widgets on the display changed. This would be useful in a scenario where a user notices new widgets on StoneSoup and wants to understand why they were displayed. A user can press on any history element to know the complete state of StoneSoup at that time, which consists of checked-in users and the themes and widgets enabled by them.

Conclusion

Proactive displays are increasingly becoming pervasive. In this work we presented a community driven proactive display system called StoneSoup that aggregates content from its users. By leveraging existing literature, we designed and developed StoneSoup to allow its users to easily create and share content for increased interaction and awareness within the community. We believe that our designs related to social configuration are an important contribution towards collaborative systems.

Note

The title of the paper- StoneSoup is taken from the folk tale inspiring contribution by the community for the greater good [1].

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