URB 10 Remapping-LA Cultural Civic Computing in Los Angeles

URB 10.1 People

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URB 10.2 Overview

Remapping-LA seeks to engage and work with Los Angeles communities to explore, develop and implement technological tools and mechanisms that: (1) Enable a multiplicity of citizens’ driven investigations of the city’s civic history, structural conditions, urban systems, and developmental process. (2) Promote and facilitate collective forms of expression reflecting in form and content the cultural and social specificity of the producing communities. (3) Instigate multicultural interaction, intersection, and connectivity between the investigations and expressions of the diverse communities of the city.

REMAP has collaborated with CENS to develop sensing and data management technologies for Remapping-LA. The project’s decentralized, participatory approach to technological development aims to follow these principles: (1) Participatory from the ground up. Community groups are involved in every aspect of the design and development of the technological systems and production procedures. In other words the community groups drive the creation and usage of the tools. (2) Awareness of the context in which the systems are being designed. (3) Encouragement of tangible and meaningful interfaces between project members and media.

The core component of the project focuses on a partnership with the California Department of Parks and Recreation to utilize the emerging Los Angeles State Historic Park as a living laboratory. In collaboration with the adjacent Chiparaki Cultural Civic Computing Center, Remapping-LA engages community groups and civic stakeholders in the development of participative interpretive technologies for this important park dedicated to the past, present and future of Los Angeles.

URB 10.3 Approach

Remapping-LA follows a multi-pronged approach: (1) Through the production of a series of interconnected and evolving demonstration prototypes the project explores and demonstrates the possibilities of a multiplicity of current and exploratory technologies and participative technological approaches. These prototypes engage community groups at increasingly deeper levels of research, design, and creation, and have utilized the platforms and technologies (e.g., Campaignr, Sensorbase, and the SMS gateway) created by the urban and participatory sensing group at CENS. (2) The project engages the community groups through a series of dialogues, workshops, training sessions and design discussions centered on their civic specificities, needs, and cultural identities. These
process results in the formulation of the community groups’ own research and expressive interests, and the development and configuration of corresponding tool sets and usage patterns. It also is used to define and adjust technology design direction. (3) The methodology of the research consists of repeating cycles of three steps: first, exploring the city; second, designing and developing new technological systems that express what is discovered; and third, inviting the rest of the city to experience and comment on what is created. (4) An ongoing, evolving interpretive database and data visualization toolset is being developed that is at once expressive of the multiple community driven research/expressive processes and a rich resource for additional ones. Among the contents of this interpretive database are citizens’ generated photography, videos, recordings, maps, keywords, annotations, observations, data gatherings, etc.

**URB 10.4 System(s) Description and/or Experiments**

Remapping-LA investigates and develops urban computing systems for collective applications in collaboration with CENS. We believe Cultural Civic Computing systems emerge by pooling interpretive databases, imaging tools, sensing instruments, and wireless mobile devices. These networks are demonstrating important practical developments, including comprehensive understandings and representations of the cityscape and enhanced interpretive tools for civic development. In 2008, several concepts and systems developed for the public space interactive media piece *Junction/Juncture* were extended further and deployed for the *Remapping LA Hollywood* project.

*3D navigable environment (Hollywood)*

We continue to research the combination of dynamically constructed and curated experience through the use of “interpretive databases” for mobile experiences and media installations, including *Junction/Juncture* (2007), *Imageability* (2006) at the Los Angeles State Historic Park. This approach typically associates with each piece of media a location tag, thematic keywords with relevance rankings, and overall ranking/weighting for themes and media. Most recently, for Remapping LA Hollywood, we built an interactive visualization tool for this type of media database using the Ogre3D open source graphics engine and Python bindings. The system automatically extracted media from the web-based gallery of media, laid it out in geographic space, imported custom maps, and rendered this in the game environment.

*Mobile Tablet Interface (Hollywood)*

We have built a Flash-based mobile application (supported by the maemo ports of sqlite, i, and other tools) that presents location-based “itineraries” of media. The platform will synchronize with the open-source Gallery2 media database used to hold the images, audio, and video gathered by content creators, and enable group members to author rich experiences using a combination of media concept- and geo-tagging that is interpreted by the application. Ongoing research considers the (1) the language and interface used to author what content appears at what time and location, given past viewing and location tracklog history, and (2) a user interface enabling both active navigation and more passive experiences.
The prototype platform will be further developed through continued work on Remapping LA Hollywood, and two other unique opportunities: In January-June, 2009, we will collaborate with the Los Angeles consultancy Public Matters and the Southern California Filipino Workers Center to support their creation of location-based experiences of Filipino culture in Los Angeles, extending PM’s work with the youth of Filipinotown. Finally, in 2009, we expect that this platform will be brought back into our work with California State Parks and Disney Imagineering R&D, and community groups of the Los Angeles State Historic Park, which researches and experiments with new public space experiences of media for this 32-acre park under development for the heart of downtown Los Angeles.

Sensor based contextual aesthetics (Juncture/Junction)

For the interactive public space work Juncture/Junction, we created a computer vision system that could sense the movement of the Metro Gold Line through the park with high spatial precision and low latency. This system then triggered synchronized changes in outdoor lighting and the data visualization. The same system was used to observe the flow of cars on Broadway St. above the location of the installation and manipulate the visualization. The underlying vision system is being developed further for the NSF project Semiotic Pivot Activity Spaces for Elementary Science (SPASES), with PI GSEIS Prof. Noel Enyedy. Finally, we created a web query interface to retrieve the current level of the Sepulveda Dam from a federal online website, and plan to use this data in a future version of the installation.

SMS interactivity interface (Juncture/Junction)

For Juncture/Junction, we developed an SMS-based interface that enabled people in the Los Angeles State Historic Park to dynamically affect the media recalled for the digital mural by texting keywords to the system. These keywords were displayed in the 3D graphics engine, and then tuned the search parameters used to select media.

UCLA / Cisco Metropolitan WiFi Network (MetWi)

In 2007, MetWi was created by UCLA REMAP and CENS with support from Cisco, to provide a metropolitan ‘WiFi’ network testbed at the downtown Los Angeles State Historic Park as well as the UCLA campus. This deployment will complete in 2009, and cover two courtyards on the UCLA campus and the 32-acre Los Angeles State Historic Park site with WiFi access, served by a dedicated, high-speed fiber optic network on campus and extended to the Park via a 45-megabit DS3 connection. The network will enable us field testing of prototype experience.

URB 10.5 Accomplishments

- Remapping-LA Hollywood – in collaboration with Freewaves
  - Produced by Fabian Wagmister, Anne Bray & Jeff Burke
  - Directed by Fabian Wagmister and Jeff Burke
  - Six community groups engage in research about their neighborhood, historical, social, cultural patterns that intersect and influence theirs lives in it. The resulting collective database is a deep and expansive view into Hollywood and its multicultural community. The participating individuals and groups collaborated in the ultimate creation of a navigable interactive 3D environment and a set of mobile tours for the Freewaves Festival of Media Arts.
• UCLA / Nokia Brainstorming Session on the Future of Mobile Entertainment. Organized this full-day session with 35 professionals and academics to develop themes and connections for the new Nokia R&D Laboratory in Hollywood. May 15, 2008

• UCLA / Nokia Summit on Sustainability and Mobile Technology. Co-organized this summit in Nauvo, Finland.

• Two Nokia Research Hollywood seed grants:
  • Integrating Augmented Reality with Location-Based Experience on the Maemo Platform
    • Seeding an open-source ecosystem for location-based mobile experience

• Finalization of a draft Interagency Agreement with California State Parks for a funded collaboration in which REMAP and State Parks will collaborate and explore opportunities for how technology can play a role in the interpretive planning for Los Angeles State Historic Park. When completed the park will be an important public space that will provide unprecedented opportunities in Los Angeles for residents and the public to connect with cultural, recreational, and natural open space along the Los Angeles River and also provide a direct park linkage from downtown Los Angeles to the river as had been proposed over 65 years ago in the unrealized Olmstead/Bartholomew Parkway Plan. This relationship will explore how Los Angeles communities can co-create technological systems for public space with which to express and explore their own, and their community’s cultural heritage and identities.

• Develop analytic and interpretive tool for citizens’ data mining of urban official public data.

• The exploration and integration of different perspectives on community data gathering, cultural experience, and civic engagement. The Remapping-LA project will continue to explore how geographic, social, cognitive, and historical/interpretive models for research and expression can inform (and be embodied within) the tools and processes that are developed.

URB 10.6 Future Directions

URB 10.7 External Research Partnerships

UCLA Partners

School of Theater Film and Television
  • Center for Community Partnerships
• HyperCities

**Community Partners**

• William C. Velasquez Institute
• Anahuak Soccer Federation
• Gay and Lesbian Elder Housing
• LeConte Middle School / LACER STARS
• The Oasis of Hollywood
• Business Improvement District (BID) / Clean Streets
• William Mead Housing Project / Youth Club
• Filipino Workers Center

**Other Partners**

• California Department of State Parks, Ruth Coleman, Director (current)
• Freewaves – Anne Bray, Director (current)

**Industry Support**

Cisco Systems

• Nokia Research Hollywood
• Walt Disney Imagineering Research and Development, Inc.