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Digital Waste or a Valuable Resource?

Exploring the Aesthetics, Ethics
and Value of Contextual Footprints

This paper introduces the early stages of the research conducted by the recently awarded Horizon project (RCUK 2009-14), in which an interdisciplinary team comprising staff from Computer Science, Psychology, Sociology, Business, the Arts and Humanities collaborate with over 36 industrial partners to research and develop new ways to use the electronic ‘footprints’ we leave behind whenever we utilise mobile, internet and other digital technologies.

We focus specifically on one of Horizon’s projects, ‘The Documentation and Archiving of Pervasive Experiences: The case of Rider Spoke’ (2010), which aimed at creating a new tool called ‘CloudPad’ for the annotation of time-based media.

Developed in collaboration with British Libraries, Stanford Libraries, the San Francisco Art Institute and the UK based art company Blast Theory, the CloudPad constitutes a tool for creating media-mashups from digital archives. The aim was to provide a customisable web-based platform that would allow the synchronised playback of cloud-based media entities (e.g. YouTube videos, audio files) together with layers of user annotations. The design was deliberately simple, and sought to make the process of synchronising and annotating multiple media streams as straightforward as possible. Media items (video, images, audio and textboxes) were added to the CloudPad page (via URL) together with ‘on/off’ time-stamps, with each item only appearing on the page between these two markers. The ‘current time’ could be changed by ‘playing the page’ or scrubbed backwards and forwards using the timeline at the bottom of the page. Alternatively, one of the visible media

items could be used as a 'master clock' so that when played, all other items would be synchronised to it. Text boxes were built to be 'temporally aware' so that they could appear and disappear along with the other media items. Similarly, edits to text were stored and time-stamped so that they could be re-performed during playback (c.f. Google Wave). Each media type (video, image, audio and text) was encapsulated to provide a standard interface to JavaScript. This was to allow the media type to be 'on/off' (currently visible on the page or not), to be re-positioned and scaled and to act appropriately on time-change events (including user controlled changes to its own time), and to generate such events during playback. The platform was implemented so that it would be straightforward to add further media types (for example a Google Earth or Graph window) by encapsulating and conforming the new type to the JavaScript interface. The look of the page was specified using cascading style-sheets allowing simple re-purposing of the platform.

Content-wise, the prototype archive was built around a documentation of Blast Theory's Rider Spoke when it occurred in Linz (Austria) during the ars electronica festival (2009). Rider Spoke is a location-based game for cyclists developed by Blast Theory in collaboration with Mixed Reality Laboratory as part of the European research project IPerG. The work encouraged participants to cycle around a city in order to record personal memories and make statements about their past, present and future that were associated with particular locations in the city. Rider Spoke, which has so far been experienced by over 2000 participants and has toured in the UK, Europe, South America and Australia, also allowed participants to find and listen to the responses of preceding players. These were built over time, as each day's recordings were loaded into the system overnight to appear in the performance the following day.

A range of equipment was utilised to make the recordings of the participants' experience. The riders' location was recorded using a GPS device. In-game audio was recorded along with the participants' responses and any environmental sounds. Videos were also taken of the riders from two key vantage points (a 'chase cam' followed the bike, creating a third person perspective, and an upwardly mounted 'face cam' mounted on the handlebars of the participant's bike creating a first person perspective). Two devices were used to record the position of the participant riders. An N95 phone from Nokia has an inbuilt GPS device and recordings were made with the SportTracker software. The device i-gotU is designed to retrofit GPS positioning onto cameras so images can be geo-referenced at some time after they have been taken (a user presses a button on the i-gotU device around the same time an image is taken and the times used to co-reference the location image was taken from).

The Rider Spoke CloudPad Archive not only offers an insight into Rider Spoke itself, with interviews to participants, Blast Theory and technologists from the Mixed Reality Laboratory, whilst linking to external materials, such as articles, videos, photos and GPS maps created by Blast Theory and the Mixed Reality Lab, but also allows insight into how a number of users

navigated and annotated these materials, thus making it possible not only to study the 'original' Rider Spoke event but also to look into how it is annotated over time by others.

We conclude this paper by offering an initial examination of how we think the digital footprints generated in engaging with the CloudPad could be harnessed, 'recycled' and accessed to transform the way we document and archive our experiences.

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