SIGCHI Extended Abstracts Sample File

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ABSTRACT

Knowledge is power - Personal Informatics is a class of systems which aim to use personal data to improve self-knowledge. These systems are commonly designed for specific tasks, using sensors to offload the effort from the user to the system. We suggest exploring a new strategy: self-logging equipment that is inexpensive, multi-purpose, and embeddable. By creating a tool with a generic interface, we enable people to have more control and customization than traditional systems while still alleviating the user's workload. We propose I/O Bits - simple modules with physical interaction components and an e-paper display that individuals can use to manually track a wide variety of activities and phenomena throughout their daily lives. The display show visualizations of the user's data to support reflection and insights during tracking. The modules are small and low-power, allowing them to be integrated into a diverse range of everyday environments, supporting spontaneous, flexible, and user-driven tracking that is not restricted by sensors or mobile devices.

WOODSTOCK'97, July 1997, El Paso, Texas USA

Good Utilization of the Side Bar
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Sidebar 1: This is the optional caption

CCS CONCEPTS

- **Human-centered computing** → **Human Computer Interaction**; *Visualization*.

KEYWORDS

Personal Informatics; Self-logging; User-driven tracking; Internet of Things

ACM Reference Format:
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INTRODUCTION

Personal Informatics systems help people collect personally relevant information for the purpose of self-reflection and gaining self-knowledge [4]. Self-logging technology has become very popular in recent years, with the sector estimated to hit 7 billion dollars by 2024 in the US alone [1]. A majority of <these systems || self-logging tools> (the ones that help users collect data. . .) utilize sensors to reduce the workload on users. As a result, the sensor-based systems often have a specific purpose and make it difficult for users to customize what data counts. <You have a reference that talks about the importance of customization/story telling/and the distrust in sensors – maybe use that here>. Examples of these systems include: Fitbit for fitness[], Mint for finances[], and Strava[] for location. An alternative approach these systems often take when sensing is too complex is to integrate user-driven logging systems into multi-purpose mobile devices, such as cellphones. Examples of this type of system include: time logging apps like Toggl[], calorie counters such as MyFitnessPal[], and mood trackers such as Happiness[].

While the first approach is successful in reducing the load on the user, it is also limiting. Each device is specifically designed for particular tasks and give users little flexibility to track other activities. The second approach is usually inexpensive and allows for a wider breadth of data types to be collected. As they are seamlessly integrated into a user's <existing technology ||life>, they are easy to forget and therefore easy to abandon <You have a citation sating that when people start missing data collection moments they abandon – use it here> Additionally, these systems are often cumbersome to interact with while engaged in an activity, making them inconvenient. <Do you have a citation?>

We want to propose a third approach that focuses on collecting a wide variety of data types, facilitates user customization, while reducing the workload of the user (as compared to low tech solutions such as pen and paper), and keeping costs low. While this approach will not be without its own set of drawbacks, we believe it fills a gap left by the other two approaches.

Figure 1: Insert a caption below each figure.

I/O Bits will not replace sensor-based logging, but they will allow for a more diverse exploration of personal data without requiring the time and resources to create automated systems. This effort aims to support more ubiquotious user-driven logging while reducing the overeall burden on users.Iobits don't replace the above approaches to personal informatics systems (you arnt going to hit a button for every step you take – or carry around a dozen to capture several different types of data) – often the mobile based user driven logging involves the need to type – which iobits cant do. . .

To study this approach we have designed I/O Bits, cheap, low-power tracking and visualization tools that can be embedded in a variety of physical environments. We imagine a (very near) future in which it's possible to have dedicated, lightweight, inexpensive, persistent, and networked tracking and visualization tools available anywhere you want them.

The specific design of I/O Bits also provides solutions to two major issues with personal informatics systems: abandonment and security.

Research has shown that people abandon devices for a variety of reasons, not all of which are bad [1, 3, 4]. Often people abandon tracking because they have gained the insights they need, have successfully created a habit, or have deemed their tracking not worth the effort. Regardless of the reason, most people abandon tracking within the first 6 months [1, 6]. For most self-logging tools this is the end of their life. However, because I/O Bits are generic they are <not only able to be used concurrently to track a wide variety of data, each device is> also reusable. Each device can be repurposed repeatedly, allowing users to abandon tracking tasks they no longer find useful and start tracking new activities with little new investment.

In our system a data point is logged when a user presses a physical button on the I/O Bit, because there are no sensors the data collect is relatively simplistic. The simplicity of the data collected and the generic nature of our system means that without context – an adversarial could gain access to our data – but privacy would be maintained.

Text styles. The LaTeX template facilitates text formatting for normal (for body text); heading 1, heading 2, heading 3; bullet list; numbered list; caption; annotation (for notes in the narrow left margin); and references (for bibliographic entries). Additionally, here is an example of footnoted[1] text. As stated in the footnote, footnotes should rarely be used.

[1]Use footnotes sparingly, if at all.

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		Test Conditions	
Name	*First*	*Second*	*Final*
Marsden	223.0	44	432,321
Nass	22.2	16	234,333
Borriello	22.9	11	93,123
Karat	34.9	2200	103,322

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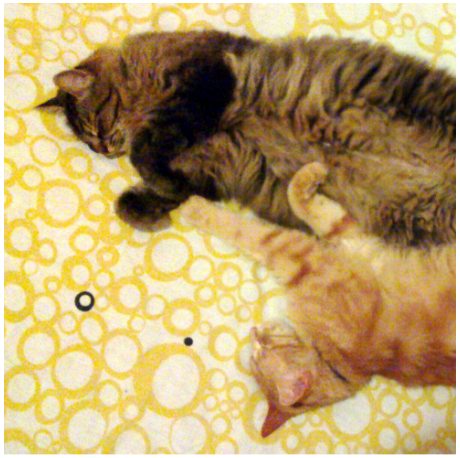

Figure 2: In this image, the cats are tessellated within a square frame. Images should also have captions and be within the boundaries of the sidebar on page 2. Photo: ⓒⓘ jofish on Flickr.

Table 2: A simple narrow table in the left margin space.

	First	Location
Child	22.5	Melbourne
Adult	22.0	Bogotá
Gene	22.0	Palo Alto
John	34.5	Minneapolis

staff-hours, person-years) that is gender-neutral. If necessary, you may be able to use "he" and "she" in alternating sentences, so that the two genders occur equally often [10].

- If possible, use the full (extended) alphabetic character set for names of persons, institutions, and places (e.g., Grønbæk, Lafreniére, Sánchez, Nguyễn, Universität, Weißenbach, Züllighoven, Århus, etc.). These characters are already included in most versions and variants of Times, Helvetica, and Arial fonts.

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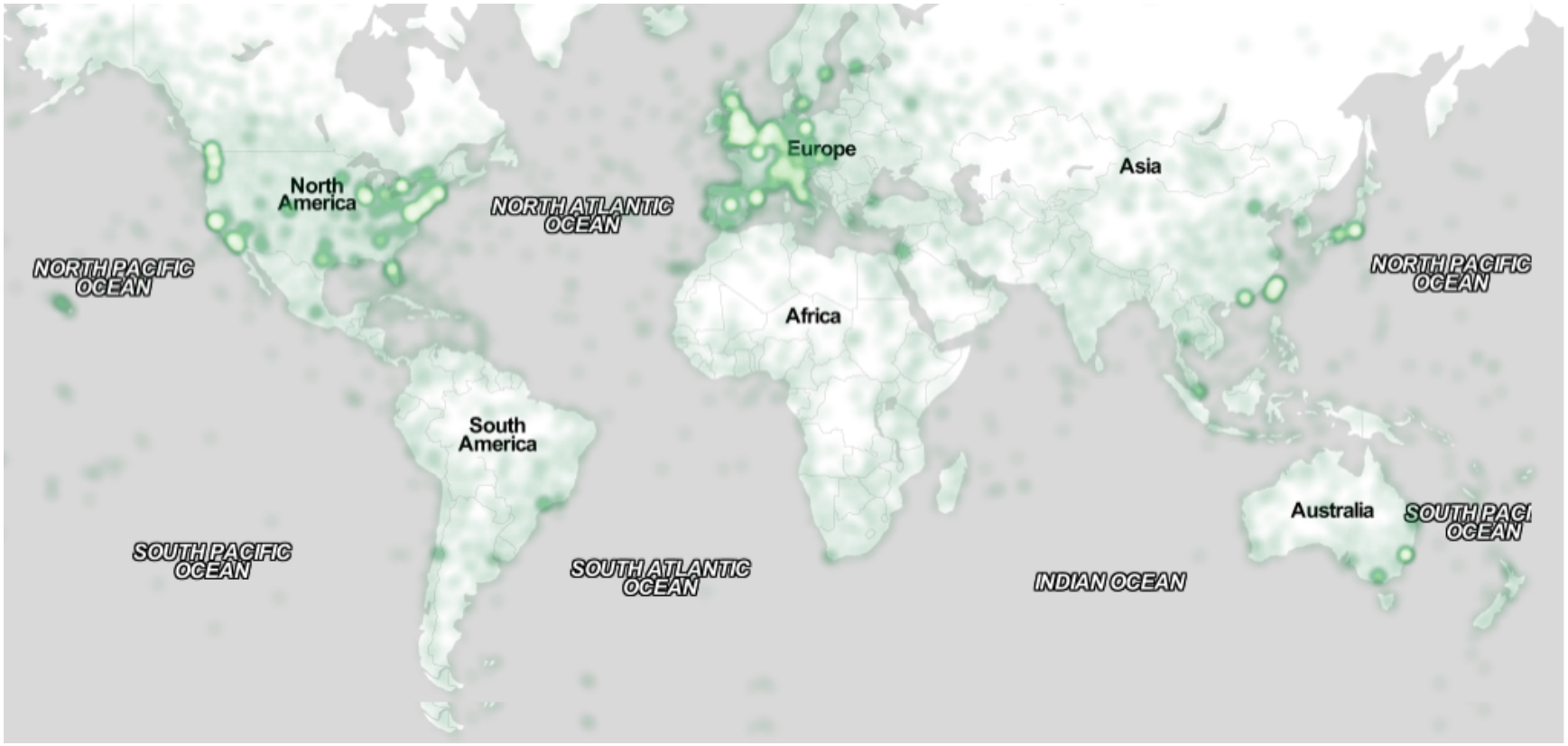

Figure 3: In this image, the map maximizes use of space. Note that LaTeX tends to render large figures on a dedicated page. Image: ayman on Flickr.

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