
RepliCHI SIG – From a Panel to a New Submission Venue for Replication

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Abstract

At CHI2011 we ran a panel on how the CHI community handles the replicability of research and the reproducibility of findings. Careful scientific scholarship should build on firm foundations, which includes re-examining old evidences in the face of new findings. Yet, as a community that strives for novelty, we have very little motivation to look back and reconsider the validity of previous work. Thus, for CHI2013 we are planning a new venue, where replicated studies can be submitted, presented, and discussed. For CHI2012, we propose a SIG to discuss the preparations for how RepliCHI will work in its first year. We invite participation from those interested in setting an agenda for facilitating replication in HCI, including those who have begun using replication as a teaching method since RepliCHI at CHI2011.

Keywords

Research Methods, Replication, Reproducing results

ACM Classification Keywords

H5.2 [User Interfaces]: Evaluation/Methodology

Introduction

The notion that research should be replicable, and results reproducible, is a cornerstone of scientific

progress, yet the publication of replicated research is a difficult subject. Many journals simply reject replication papers, or at least explicitly specify 'original work' in their description. Similarly, our CHI community focuses heavily on novel research findings, and often rejects papers for being incremental, let alone replications of research. Further, as a discipline, HCI is not entirely scientific in nature, with much of the research being qualitative, creative, or about design. Consequently, we have ended up as a community that accepts the notion that research should be reproducible, in how it is reported in papers, but provides no motivation or facilitation to ever do so. This SIG aims to actively discuss plans for a new publication venue at CHI2013 that will begin to facilitate replication of research: RepliCHI. RepliCHI will make the first steps towards understanding the role that replication might play in Human-Computer Interaction.

More on Replication

Replication of research is an interesting topic, and one that many agree about in principle. CHI, and related publishing venues, pushes for user studies that provide significant results, with a confidence value that indicates the results are unlikely to have occurred by chance. Much HCI research, however, is evaluated with a small sample of people from one specific location, and even sometimes with computer science students alone. It is often beyond the remit of researchers to take a sample of participants from every country in the world, or to travel the world repeating the study with different cultures. Yet we take findings with significant results to be true, and often build upon them with new work, as if we are pretending all users are alike across different contexts and settings. Further, technology changes at an incredible rate, and foundational research from even

5 years ago may no longer be accurate. At the RepliCHI panel in 2011 [8], Dan Russell, argued that replicating research on the web was hard because it changes every few minutes.

It is clearly within the research interests of our community to validate findings and to know what is true or not true across different user populations and usage contexts with current or new technology. Replicating research, however, has many barriers, and is potentially challenging. Obtaining software used by others might be very difficult; some is proprietary and some is in an evolving prototype stage. Reproducing software can create confounding variables, as small experience differences might have a significant effect on results. The tasks used in studies might be culturally or temporally sensitive, or the way interviews are performed, for example, may be notably different.

The availability of data may also be a barrier for replication. Data may be restricted, confidential, proprietary, or simply hard to share. Some data may also involve privacy concerns, such as public data logs, which are notably hard to anonymise [5]. To try and overcome this barrier, some journals and conferences encourage replication by requesting that data be published alongside papers wherever possible (e.g. 1,2).

Replicating research may also be risky. Although confirmation of findings would be welcome in our community, it is hard to publish research that does not include novel findings. Consequently, investing the time and resources needed to replicate a funded study, for

¹ http://www.jitp.net/m_replicat.php

² <http://www.icwsm.org/2012/submitting/datasets/>

example, may produce no publishable outcomes. Even conflicting results may be hard to publish.

Replication is also challenging for some styles of research in our community. Much HCI research is product-focused research, where methods for studying an evolving experience are popular (e.g. [7]). A general division between UX professionals and research practice has developed [1], where industry often struggles to trust academic findings or find ways to apply them. Much HCI work is artistic and creative, and is thus focused on doing something new. Much work is also qualitative, such as ethnographic research into communities, which by nature produce deep and meaningful insights into experiences that are dependent on the individuals and cases being studied.

HCI is not the only community that is grappling with these questions. Other partially experimental-scientific domains like sociology and political studies have asked similar questions over time [3, 6]. Yet other more technical communities thrive on replication. The Cranfield paradigm, embodied by the TREC conferences, depend upon the ability to reproduce algorithms within a fixed environment to evaluate new novel retrieval algorithms [2, 4].

As a whole, however, there are many experiments in HCI that we would like to have confirmed, or checked, or replicated, but these other barriers make it difficult. The aim of RepliCHI is to break one of these key barriers: a route to publication. We hope that, in time, RepliCHI will also help to bring down other barriers too. This SIG will discuss the plans for creating this RepliCHI venue, which has been proposed for CHI2013.

The RepliCHI vision

RepliCHI began at a social event at CHI2010, where Wilson and Mackay, amongst others, talked about the merit of igniting the discussion of replication in our community. Although unlikely the first to ever discuss this point informally, formal discussion began in 2011 with a panel, which attracted many key researchers and leading professors. The panel had industry, academic, new, and experienced researchers in it. The panel was highly successful with several professors subsequently choosing to use replication as a mechanism for teaching HCI to new graduate students.

One outcome was an informal suggestion that we create a small publication venue at CHI, about the size of alt.chi, which would attract submissions on attempts to replicate research. Whether these studies confirm or reject previous studies, the aim is to a) discuss challenges in replication, b) discuss possible reasons for discrepancies in findings, c) examine the foundations of our community, and d) create new research collaborations between institutions and countries. The conference chair for CHI2013, Wendy Mackay, was on the panel in 2011, and is a co-organiser of this SIG. Max is also in discussion with Matt Jones, who is co-chairing CHI2014, to continue the vision. This SIG is a vital step towards making sure RepliCHI is a success.

The RepliCHI SIG

The aim of this SIG is to discuss and plan the realization of RepliCHI for CHI2013. Although the panel was motivating, and created a lot of discussion (more than half of the panel was allocated to questions from the audience), it was not the best environment for proactive discussion. A SIG, however, is a perfect

Timing	Activity
15 mins	Introduction from organisers about RepliCHI and the aims for the SIG session.
Up to 10 mins	Questions from the audience or key points to note during the session
30 mins	Break into active self-selecting working groups to focus on key elements.
Up to 20 mins	Reporting back to from the working groups to the room as a whole
5 mins	Closing remarks and any other business.

Table 1. Planned timetable for the RepliCHI SIG at CHI2012.

environment for following up on these questions, and actually discussing and planning the issues.

We have arranged some key organizers for the SIG. Max L. Wilson would run RepliCHI at CHI2013, while Wendy Mackay is chairing CHI2013. Ed Chi is a representative of the technical program chair for CHI2012 who can talk about related experiences there. Similarly, Jeffrey Nichols is representing TOCHI and their policies and concerns. We aim further to invite participants who were present in the audience of the panel, and were active in asking questions. We expect interested participants will be teachers, researchers, and those interested generally in HCI research issues.

The SIG will be chaired by Max L. Wilson and will follow the structure set out in **Table 1**. The aim is allocate significant portions of discussion, in smaller working groups, to proactively work on elements needed to run RepliCHI. Consequently, we hope that the outcomes of the panel will be to produce draft documents, such as a Call for Papers, review criteria, submission advice, and so on. Depending on the size of the group, we initially plan to work on the call for papers and the review criteria. Should the group be bigger, general advice for the CHI community on replication was also discussed at the panel, which may be of interest for some in the SIG. Collaborating as a small interested community will mean that we begin RepliCHI next year with a strong, rounded, and well thought-out event.

Conclusions

The replicability of research is something that CHI in principle approves of, but does not reward, motivate, or facilitate in any way. The aim of RepliCHI is to provide a small publication venue at CHI that will help us, as a

community, to explore ways to support and facilitate replication, and understand the role that it will play in HCI research. This RepliCHI SIG is a vital step towards realizing RepliCHI as such a venue, and aims to discuss and plan for its future.

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