

PlayIT 2011

First International Workshop on Games for Knowledge Acquisition

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ABSTRACT

Many problems in knowledge acquisition, such as image labeling, still rely on extensive human input and intervention. In order to attract people to invest the necessary time into such tasks, rewarding incentives and motivation mechanisms have been employed. While recruiting "human cycles" for such tasks is difficult, online games manage to attract plenty of attention (due to the fact that they provide inherent incentives, such as fun and competition). This workshop focuses on games that embed various knowledge acquisition tasks into the context of online games, with the end goal of attracting the sufficient manual labor.

Categories and Subject Descriptors

H.3.5 [Information Storage and Retrieval]: On-line Information Services—*Web-based services*; D.5.4 [Information Interfaces and Presentation]: Hypertext/Hypermedia; K.4.2 [Computers and Society]: Social Issues

General Terms

Human Factors

Keywords

Games

1. INTRODUCTION

Across many areas of knowledge acquisition and management, human input and intervention is required. For instance, simply adding a descriptive tag to an image or categorizing a video requires human input. Another example is the manual data curation in data interlinking: a prerequisite for publishing high-quality, well-interlinked data on the Web. Many more examples can be found in various areas of information management, where semi-automatic methods are applied in order to speed up the process of knowledge acquisition, such as ontology learning, semi-automatic alignment of heterogeneous vocabularies, text or speech analysis tools. Experts in the area will agree that this list can be

continued for a long time. A well-known example for the idea of "human computation" is the distinction of human users from machines: "Captcha", images showing distorted characters that a human can easily recognize and decipher while a machine cannot. Since the amount of information of all types (video, images, text, sound) continuously increases on the Web and within organizations, the need for managing this data and creating descriptive metadata increases. The problem is that for many knowledge acquisition tasks, the barrier of entry for many platforms and tools is too high. Moreover, the benefits of using metadata are in most applications fully decoupled from the effort of its creation and maintenance. In other words, users do not have a motivation to contribute to the process. This is in strong contrast to the Web 2.0 movement; the popularity of Wikipedia and alike can be traced back to these two aspects. At the same time, many people spend a substantial amount of time in playing games. Playing is intrinsic to human nature: playing for fun, competition, relaxation, challenge, fame, social interaction and others. One way to benefit from the vast amount of hours spent playing is to apply smart algorithms in order to extract meaningful information from game inputs as initially proposed by Luis von Ahn's "Games with a Purpose". Since then, there have been more proposals to use casual games which capitalize on fun and competition as two key motivators for people to willingly invest their valuable time and effort in knowledge-acquisition related tasks, whose technical details hide behind an entertaining collaborative game experience. Many "games with a purpose" have been published: games for image, sound, image description, games for support natural language processing tools, games for building shared vocabularies on domains, and many more. The PLAYIT workshop will provide a forum for researchers and practitioners in Web technologies to discuss and exchange positions on the topic of using games for acquiring knowledge following the paradigm of human computation. The workshop aims at creating a community, establishing a platform for idea exchange, discussion, and will establish a common ground for future research collaborations. The workshop is intended as a follow-up in a more scientific format to the INSEMTIVES Game Idea Challenge.

2. MOTIVATION

The indisputable need for human contribution, interven-

tion, and feedback for many tasks related to information management and knowledge acquisition has turned out to be a bottleneck for many systems. High quality manual labor is required to provide the input that is required for systems to carry out various information management tasks. For instances, image, video, sound annotation require human intervention heavily, just like semi-automatic text or speech analysis needs human feedback. Another emerging area is the one of linked data: the simple idea of creating links among large datasets in order to overcome heterogeneity and allow access to networks of knowledge only works if this data is properly interlinked. Now, most interlinking methods are semi-automatic and hence require human validation. Games are one way to attract user attention and efficiently exploit the time users spend playing games, for different purposes in knowledge acquisition. As many users spend a significant amount of time on playing (online) games, the idea to channel this labor into meaningful and later useful ways is straightforward. Recently, several games addressing different tasks of knowledge acquisition were published. Also, several research initiatives have started to look into the topic from different perspectives (e.g. the EU projects INSEMTIVES, KIWI, or ACTIVE). The workshop aims at gathering researchers and practitioners around this topic, fostering discussion and exchange of ideas, as well as creating a common ground for future collaborations. We have a comprehensive list of games in the area, sorted by the type of content they look at, for instance images or video, available at <http://www.insemtives.eu/games.php>.

3. TOPICS

The objective of PLAYIT is to foster the thinking process about games that have the purpose of acquiring knowledge in some form. The topics include but are not limited to:

- Analysis and surveys of games with the purpose of knowledge acquisition
- Proposals for new game models for acquiring knowledge
- Cost ■ benefit analysis for games
- Games exploiting the 'Wisdom of Crowds'
- New games for creating different types of information in a human-driven way
- Evaluations of 'games with a purpose'
- Going beyond quiz gaming models and using new game formats for creating information (e.g. shooters, fantasy games, role plays, etc.)
- Games for data interlinking, multimedia annotation, text analysis, speech analysis, etc.

4. PROGRAM COMMITTEE

- Roberta Cuel, University of Trento
- Carl Goodman, Peppersghost Productions
- Hans-Joerg Happel, Karlsruhe Institute of Technology
- Tania Tudorache, Stanford University
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5. ACKNOWLEDGMENTS

The workshop was partially funded by the EU IST FP7 project INSEMTIVES¹. We also thank the program committee for the indispensable help in the selection process for the workshop program.

¹<http://insemtives.eu>