A Brief History of Zooniverse: Designing for Multi-Domain Citizen Science

(Authors removed for reviewing)

ABSTRACT

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H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

INTRODUCTION

Citizen-science is a type of human-powered computation [] that can be both beneficial to those who participate, as both an educational tool and cognitively-stimulating source of entertainment, as well as an unprecedented method of faciliting the discovery of significant, novel scientific findings. The result of the relatively few citizen-science projects on the Web today have already generated a comparably large number of findings [], through the collective contributions of hundreds of thousands of volunteers.

However, designing effective science apps that can achieve both goals can be challenging. First, such systems must appeal to participants with an extremely wide range of expertise, ranging from no knowledge of the field to significant background and interest. Moreover, particpants naturally feature a diversity of natural competencies, which is manifested in some people being simply much more adept at some tasks than others. Finally, there are a large variety of issues pertaining to keeping individuals motivated, interested, and deriving personal benefit while participating, as well as supporting various degrees of engagement – from the "sunday scientist" to the "scienceoholic".

In this paper, we provide a detailed case study of a citizen-science platform which offers the unique position of having expanded from one experiment focused on a single domain to more than X distinct projects spanning Y domains, including astronomy, zoology, marine biology, archaeology, and paleontology, over its two year evolution. These applications, though separate, have been built on top of a single unified framework known as Zooniverse, which has been successively refined and scaled as the variety of tasks and number of participants have increased.

The purpose of this examination of Zooniverse is to both to document the experience gained from launches and iterations of the various applications, as well as to debunk popular misconceptions about building long-term, sustainable crowdsourced projects. The observations derive from a lateral examination of the

The path from its first experimental app, Galaxy Zoo, to the more than twenty different projects that have launched on the Zooniverse project required generalising the findings from the first project to different kinds of tasks in other scientific domains.

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