

ECGBL 2024

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Mini Track on Citizen Science Games

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Citizen science games seek to blend scientific activities with ludic (playful) elements to better engage public volunteers in tackling challenging societal problems. Citizen science, as a field, seeks to engage public volunteers in a scientific activity with a win-win-win proposition: participants learn about science and develop greater awareness of societal issues, and researchers accelerate data collection and analysis. The third “win” is that, as a society, we can potentially solve big problems faster. Indeed, citizen science has enabled many research results now published in top tier academic journals and helped solve 50-year-old problems in disease research.

Many citizen science projects are gamified to motivate participation and improve engagement, but the degree and manner in which this occurs can vary greatly. In some cases, it is enough to add a scoring function and provide a leaderboard. In other cases, there have been more intrinsic game mechanics such as 3D object manipulation that shows how one person’s contributions fit into a larger context. Today, there are many successful examples of this.

However, there exists a fundamental tension in citizen science games. Unlike traditional games, which are solely for entertainment, citizen science games must extract research-quality data from participant activities. A game mechanic might increase the entertainment value of a scientific task but inadvertently introduce a response bias that could skew research results. Thus, a key challenge in gamifying citizen science is to figure out how to increase playability and engagement without corrupting the resultant data.

The enterprise of developing successful citizen science games is multifaceted and nuanced, carrying not only challenges in game mechanic development, but also introducing ethical issues. Thus, this mini-track will leverage existing and emerging use cases to explore multifarious topics at the intersection of engagement, analysis, and impact. Suggested topics include but are not limited to:

- Approaches to gamification based on the nature of the cognitive tasks and engagement modalities (e.g., online, in the field, in the classroom, etc.)
- Addressing the impacts of incentivization methods on research data quality
- Quantifying in-game learning and skill development and how that information can be used to improve platform efficiency, user experience, and data quality
- Ethical issues, such as equity, exploitation, and participation bias, surrounding the interplay of entertainment, education, and volunteerism



Pietro Michelucci is the director of the Human Computation Institute, an innovation center that develops crowd-powered systems to address societal problems. He is founding editor of the journal Human Computation. Michelucci received a joint-PhD in cognitive science and mathematical psychology from Indiana University and spent ten years advising federal research agencies on Artificial Intelligence. He currently leads several citizen science projects, including Stall Catchers, which engage 60,000+ public volunteers to tackle Alzheimer’s disease, related dementias, and stroke. Michelucci has appeared on PBS, Science Friday, BBC World Service, and been covered by the Wired, Fast Company, and MIT Technology Review.

Submission details

In the first instance a 300 word abstract is required, to be received by **13 March 2024**. Submissions must be made using the online submission form at <https://www.academic-conferences.org/conferences/ecgbl/ecgbl-abstract-submissions/>

If you have any questions about this track, please email: hchandbook@gmail.com

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