

Short and Long-Term

Engagement Among Volunteers

in Human Computation Projects



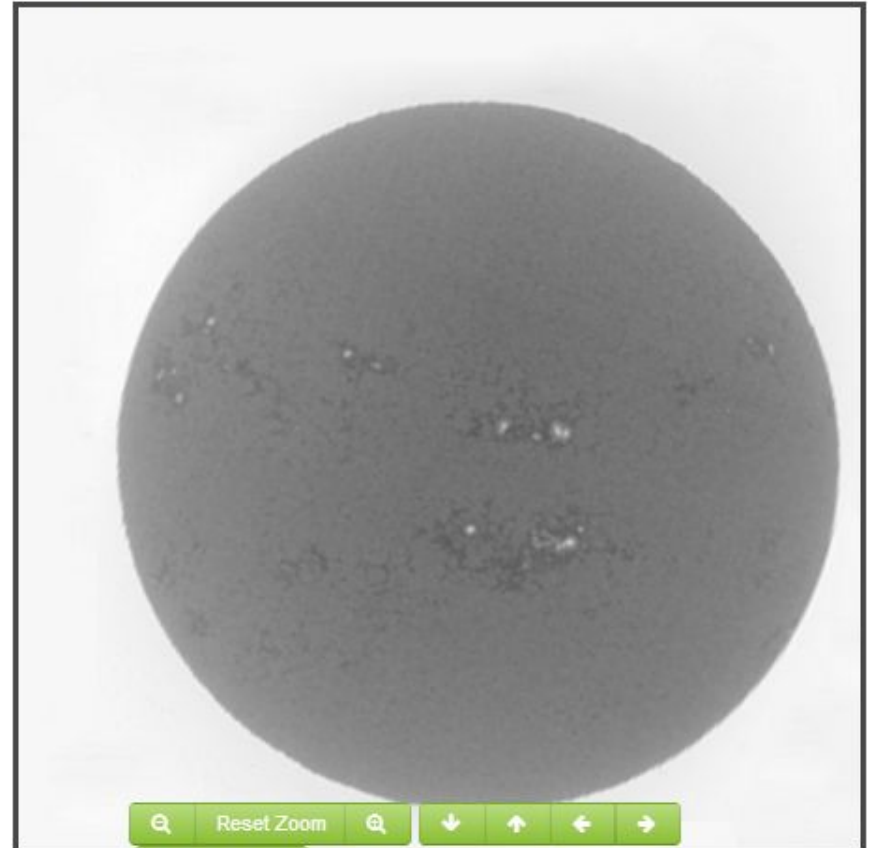
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**Human
Computation**



**Online Citizen
Science Projects**



Characterisation of Volunteer Engagement

Dimensions of Engagement

Type

Cognitive Engagement

Duration

Duration of Participation Period

Degree

Amount of Contribution

Short and Long-Term Engagement

Transients



Regulars



4

PROJECTS

Zooniverse - 2
Socientize - 2

	<u>Minority</u>	<u>Important</u>
Galaxy Zoo	36%	86%
The Milky Way Project	28%	84%
Cell Spotting	42%	90%
Sun4All	35%	70%
	of volunteers	of devoted time

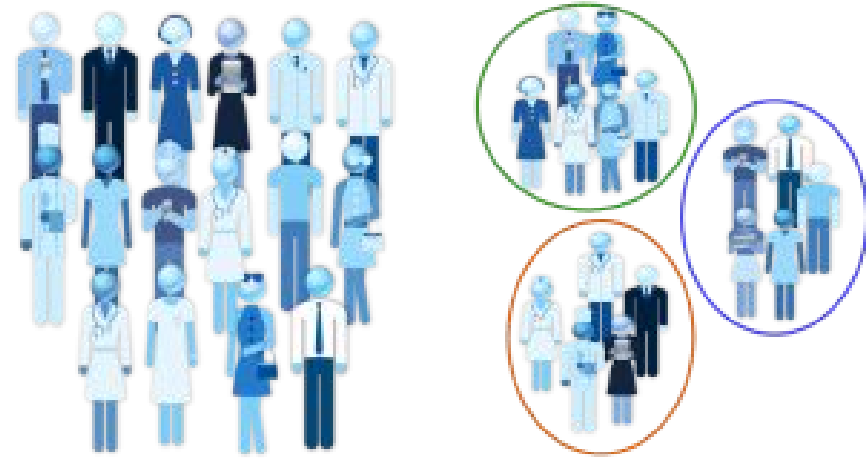
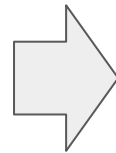
Engagement Profiles of **Regulars** Volunteers



Metrics

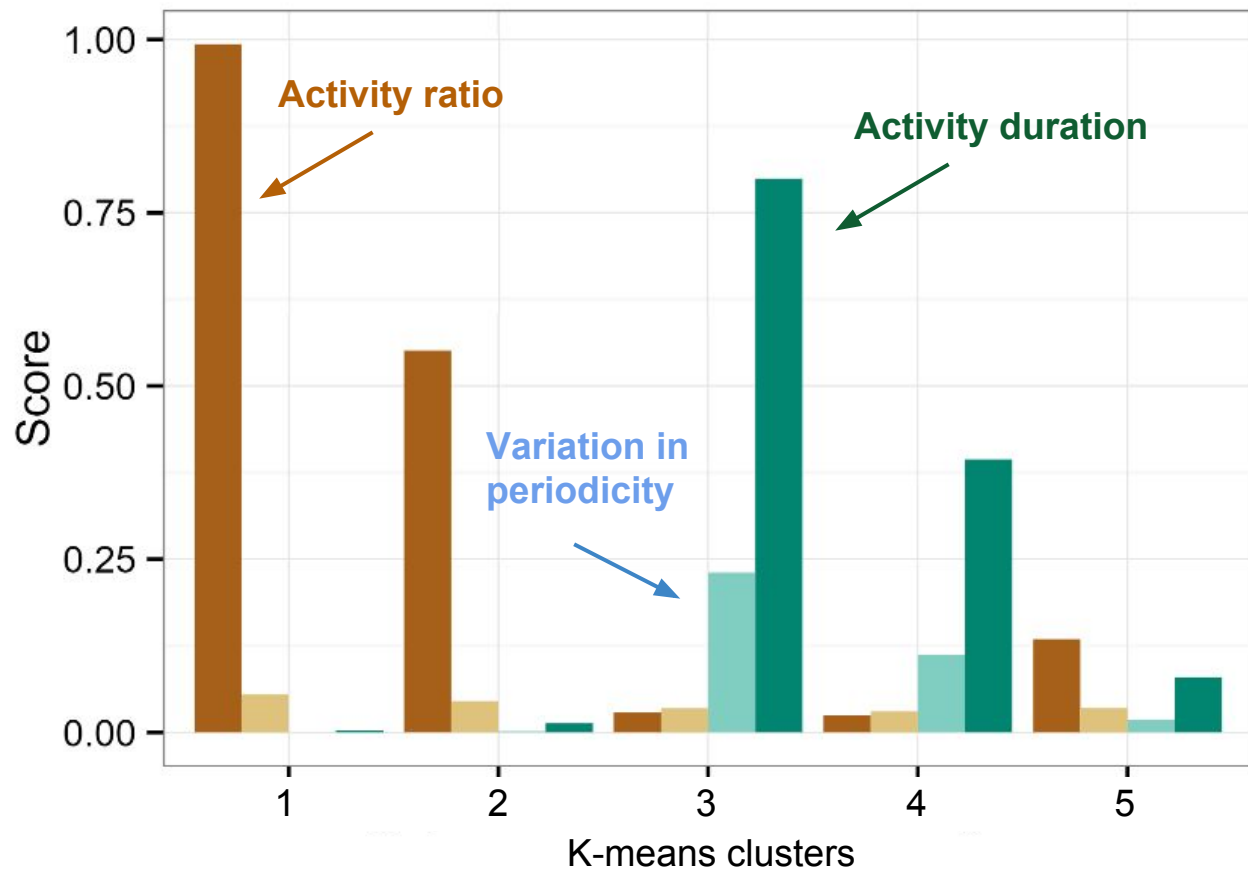
- Activity ratio
- Activity duration
- Daily devoted time
- Variation in periodicity

Measuring
engagement



Clustering volunteers
according to engagement
values

Clusters of Volunteers

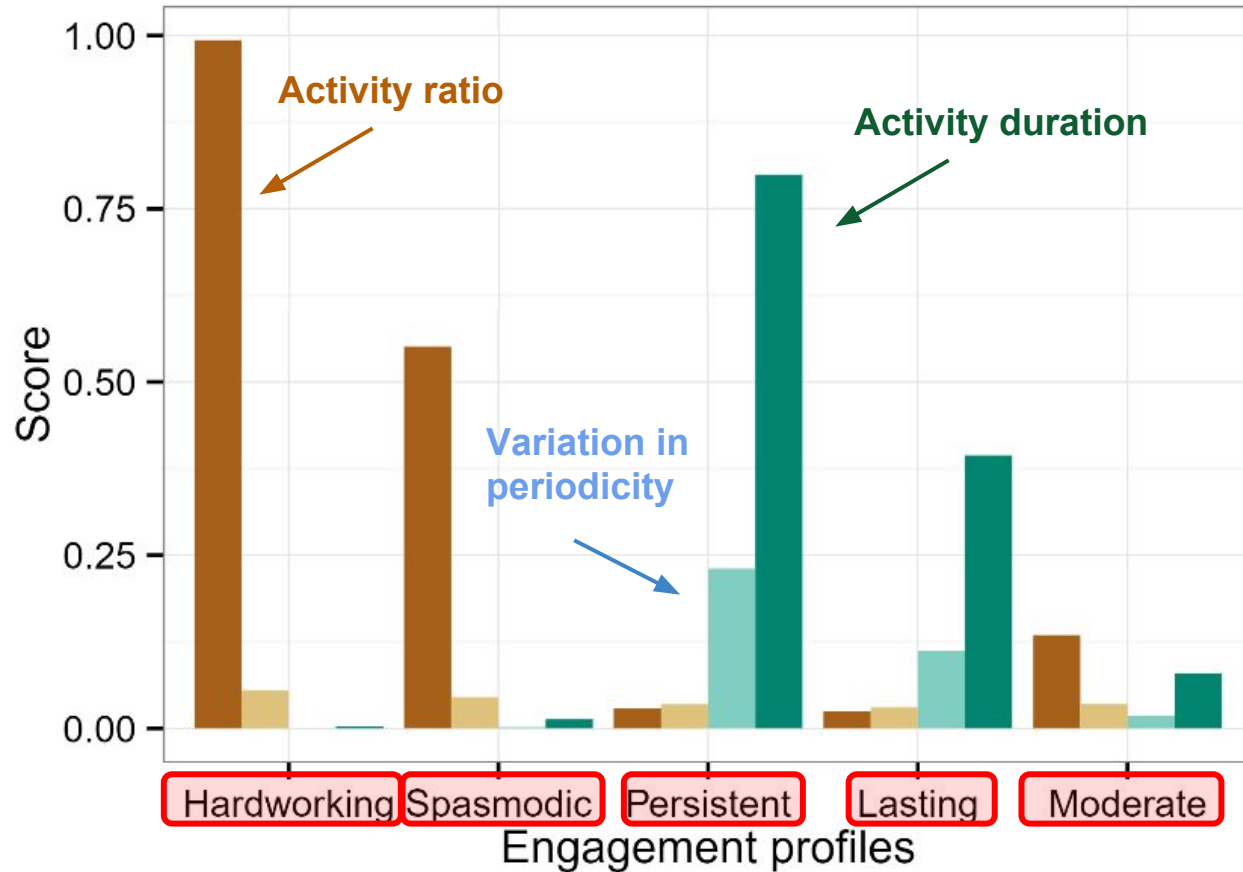


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PROJECTS

- 5 clusters of volunteers

Engagement Profiles

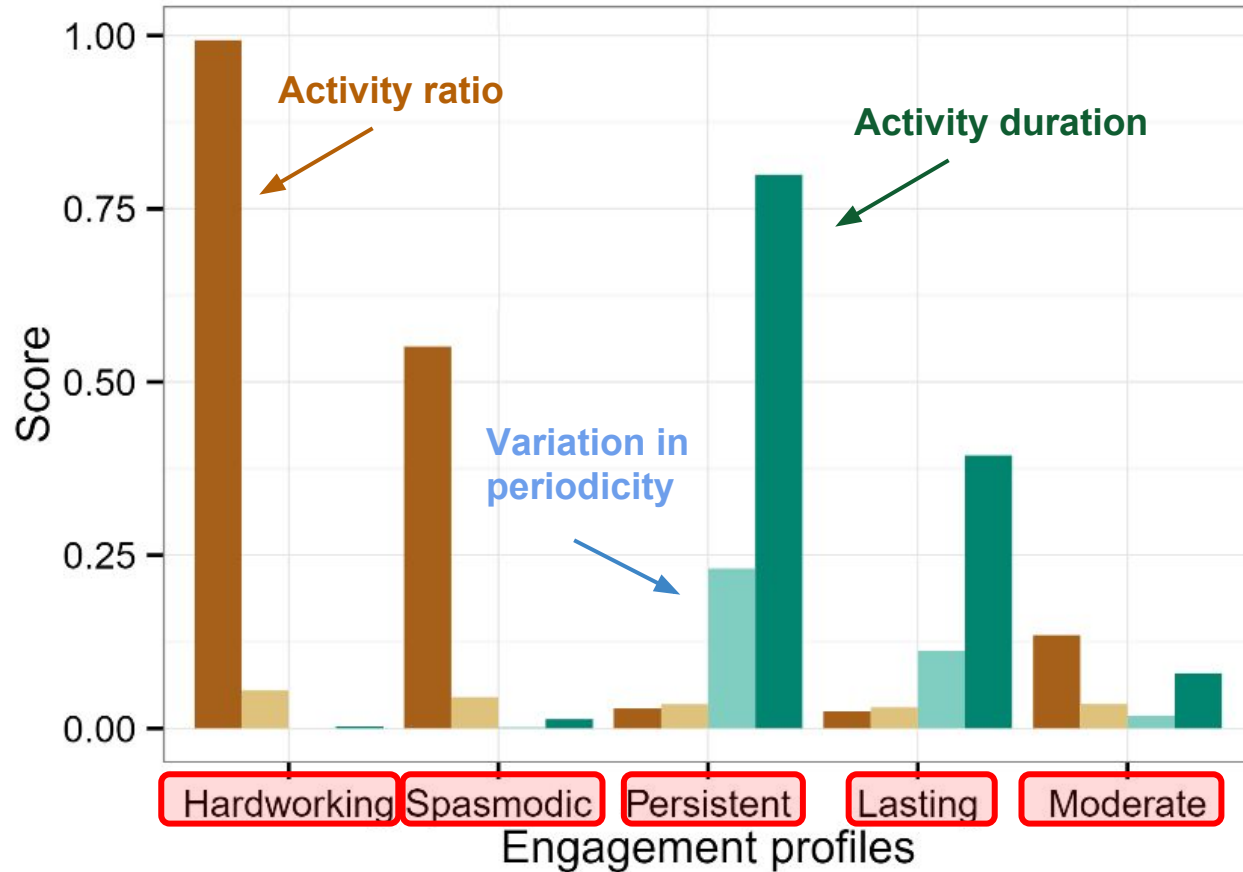


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PROJECTS

- 5 profiles of engagement

Engagement Profiles



4

PROJECTS

- 5 profiles
- Characterised mainly by the **degree of engagement** and the **duration of engagement**

Uses and Replications of Our Analyses



≈15

PROJECTS

- **2014** - Human computation + Citizen science
 - Ponciano et al. *Human Computation*
- **2015** - Foldit players
 - Vickie Curtis, *Science Communication*
- **2016** - Biological recording
 - Boakes et al. *Scientific Reports*
- **2017** - Psychological factors of the engagement profiles
 - Aristeidou et al. *Computers in Human Behavior*
- This is just a sample of studies

Take-Home Messages

- Findings on engagement patterns
 - Highly important minority (regulars)
 - ≈ 5 engagement profiles
 - Degree and duration of engagement are the major features
 - Engagement profiles are associated to different motivation factors
- New challenges to be overcome
 - Profile-oriented volunteers' recruitment
 - Profile-oriented engagement encouragement strategies

Thank You

LABORATÓRIO
DE SISTEMAS
DISTRIBUÍDOS



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References

Ponciano, L., Brasileiro, F., Simpson, R., & Smith, A. (2014). Volunteers' Engagement in Human Computation for Astronomy Projects. *Computing in Science & Engineering*, 16(6), 52-59.

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O'Brien, H. L and Toms, E. G. (2008). What is user engagement? A conceptual framework for defining user engagement with technology. *Journal of the American Society for Information Science and Technology* 59(6), 938–955.

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