

Jorge Saldivar

POSTDOCTORAL RESEARCHER, COMPUTER SCIENCE, CATHOLIC UNIVERSITY OF ASUNCION

EDUCATION	PhD Information and Communication Technologies , University of Trento, Italy 2017 <i>Dissertation: Empowering Online Idea Management for Civic Engagement with Public Displays and Social Networking Services</i>
	Informatics Engineering , Catholic University of Asuncion, Paraguay 2010

RESEARCH INTERESTS	Crowdsourcing, Collective Intelligence, E-Participation, Participatory Democracy, Machine Learning, Social Computing
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ACADEMIC AND RESEARCH APPOINTMENTS	Research Fellow , Department of Electronics and Informatics, Catholic University “Nuestra Señora de la Asunción,” Asunción, Paraguay Feb 2016 - Present
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PhD Researcher, Department of Information Engineering and Computer Science, University of Trento, Italy Nov 2011 - Nov 2015

Visiting Scholar, Center for Information Technology Research in the Interest of Society (CITRIS), University of California, Berkeley, CA, USA Jul - Oct 2014

Visiting Researcher, Information Analysis Division, Hewlett-Packard Laboratories, Palo Alto, California, USA Oct - Dec 2013

PUBLICATIONS	Journal Articles
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Jorge Saldivar, Carlos Rodriguez, Florian Daniel, Fabio Casati, and Luca Cernuzzi. On the (in)effectiveness of the Share/Tweet button: A study in the context of idea management for civic participation. In *IEEE Internet Computing*, vol. 21, issue 5, pp. 38-47, IEEE, 2017.

Tanja Aitamurto, Hélène Landemore, and Jorge Saldivar. “Unmasking the crowd: participants’ motivation factors, expectations, and profile in a crowdsourced law reform”. In *Information, Communication & Society*, pp. 1-22, 2016.

Jorge Saldivar, Carla Vairetti, Carlos Rodríguez, Florian Daniel, Fabio Casati, and Rosa Alarcón. “Analysis and improvement of business process models using spreadsheets”. In *Information Systems 57: 1-19*, Elsevier, 2015.

Conference Papers

Tanja Aitamurto, Shuo Zhou, Sukolsak Sakshuwong, Jorge Saldivar, Yasamin Sadeghi, Amy Tran, and Nathalie Mathe. “Sense of Presence, Attitude Change, Perspective-Taking and Usability in First-Person Split-Sphere 360°Video”. In *Proceedings of the 2018 CHI Conference*, ACM, 2018 (to be presented).

Tanja Aitamurto and Jorge Saldivar. “Motivating Participation in Crowdsourced Policymaking: The Interplay of Epistemic and Interactive Aspects”. *Proceedings of the ACM Human-Computer Interaction (CSCW)*, vol. 1, no. 2, article 18, ACM, 2017.

Tanja Aitamurto and Jorge Saldivar. “Examining the Quality of Crowdsourced Deliberation: Respect, Reciprocity and Lack of Common-Good Orientation”. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, pp. 2314-2321, ACM, 2017.

Jorge Saldivar, Marcos Báez, Carlos Rodríguez, Gregorio Convertino, and Grzegorz Kowalik. “Idea Management Communities in the Wild: An exploratory study of 166 online communities”. In *Proceedings of the 17th International Conference on Collaboration Technologies and Systems (CTS)*, pp. 81-89, IEEE, 2016.

Jorge Saldivar, Florian Daniel, Fabio Casati, and Luca Cernuzzi. “Idea Management in Social Networks: A Study of how to Tap into the Ideas of Facebook Communities”. In *Proceedings of the 17th International Conference on Collaboration Technologies and Systems (CTS)*, pp. 3-10, IEEE, 2016.

Tanja Aitamurto, Kaiping Chen, Ahmed Cherif, Jorge Saldivar, and Luis Santana. “Civic CrowdAnalytics: Making sense of crowdsourced civic input with big data tools”. In *Proceedings of the 20th International Academic Mindtrek Conference*, pp. 86-94, ACM, 2016

Tanja Aitamurto, Jorge Saldivar, and Juho Salminen. “Self-selection In Crowdsourced Democracy: A Bug Or A Feature?”. In *GROUP Conference*, ACM, 2014.

Jorge Saldivar, Cristhian Parra, Carlos Rodríguez, Luca Cernuzzi, and Vincenzo D’Andrea. “Participa: Fostering civic participation for public services innovation”. In *13th Participatory Design Conference*, 2014.

Gianluca Schiavo, Marco Milano, Jorge Saldivar, Tooba Nasir, Massimo Zancanaro, and Gregorio Convertino. “Agora 2.0: Enhancing civic participation through a public display”. In *Proceedings of the 6th International Conference on Communities and Technologies (C&T)*, pp. 46-54, ACM, 2013.

RESEARCH PROJECTS

Participa

Promoting civic participation in the innovation of public services and policies

- Designed and implemented a tool that integrates crowdsourcing idea technologies with general purpose social networks, like Facebook
- Contributed to the execution of a real-case process of participatory public service innovation in Asunción, the capital city of Paraguay (participation 200 people approx.)
- Applied quantitative analysis methods to study patterns in the collective and individual behavior of online innovation communities
- Designed machine learning and natural language processing algorithms to analyze crowdsourced civic input
- **Published two papers in the Conference on Collaboration Technologies and Systems**

The Finnish Experiment

Designing, implementing, and studying processes of crowdsourced policymaking

- Employed quantitative analysis methods to examine the factors that motivate citizens to participate in crowdsourced policy-making processes
- Applied exploratory data analysis techniques to study the profile of the participants of crowdsourced policy-making processes
- **Published an article in Information, Communication, and Society, one paper in ACM CHI conference, one paper in ACM CSCW conference, and one paper in the Academic MindTrek Conference**

The California Report Card

Enhancing communication between elected authorities and the public

- Modeled, designed, and implemented a Twitter app that allows citizens of California to propose suggestions on issues that merit the attention of the government
- Contributed to the execution of a real-case process of crowdsourced policymaking in the state of California (participation > 10,000 residents)
- **Published a paper in the ACM GROUP Conference**

Agora 2.0

Enhancing Civic Participation through Public Displays

- Designed and developed a platform that integrates a crowdsourcing idea system with public displays
- Contributed to the design of observational studies
- Conducted a real-case process of participatory public service innovation in the city of Trento, Italy
- **Published a paper in the Conference on Communities & Technologies**

BPM4People

Business Process Modeling for Participatory Enterprises, Organizations, and Public Administration Bodies

- Conducted a literature review study on methodologies, techniques, and approaches to constructing tools for modeling and deploying of business processes that will be executed collaboratively by people on social networks
- Applied quantitative analysis methods to study effectiveness of current social sharing practices
- **Published an article in the IEEE Internet Computing Magazine and one paper in the Participatory Design Conference**

Ianus

Platform for the Simplification, Re-organization and Improvement of Business Processes

- Designed and developed of models and systems to improve the communication between business analysts and developers and facilitate the analysis of business processes
- Contributed to the design and execution of usability tests
- **Published an article in Information Systems**

TEACHING EXPERIENCES

Catholic University of Asuncion, Paraguay

2016 - Present, 2006 - 2007

- *Instructor.* Course: Data Science with social impact
- *Research mentor.* Cotutor of the undergraduate final project: Interest-based civic engagement
- *Teaching assistant.* Course: Algorithms and data structures with the programming language C

University of Trento, Italy

2014 - 2015

- *Teaching assistant.* Course: Web Programming using J2EE technologies
- *Research mentor.* Cotutor of the master thesis: Analyzing and visualizing citizen opinions collected from social networks

Polytechnic School, National University of Asuncion, Paraguay

2010

- *Lecturer.* Course: Development for Sugar Operating System
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AWARDS & HONORS

- Best Paper Award. Academic Mindtrek Conference, October, 2016
 - PhD student fellowship. University of Trento, Trento, Italy, 2011-2014
 - PhD on the move scholarship. Trento RISE Association, Trento, Italy, 2013
 - FC-UPM-IB scholarship for post-graduated studies at Universidad Politécnica de Madrid, Spain, 2011
 - Golden-medal for the best graduate student of 2000 class at San José High-School, Asuncion, Paraguay
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PRESENTATIONS **Conference Presentations**

- *"Idea Management in Social Networks: A Study of how to Tap into the Ideas of Facebook Communities,"* International Conference on Collaboration Technologies and Systems (CTS), Orlando, Florida, USA, October 2016
- *"Idea Management Communities in the Wild: An exploratory study of 166 online communities,"* International Conference on Collaboration Technologies and Systems (CTS), Orlando, Florida, USA, October 2016

Invited Talks

- *"Civic CrowdAnalytics: Machine Learning para el análisis de contribuciones cívicas,"* JIT-Cita Conference, Asunción, Paraguay, November 2017
- *"Empowering Online Idea Management for Civic Engagement with Public Displays and Social Networking Services,"* Charles III University of Madrid, Madrid, Spain, May 2017
- *"Civic Technologies,"* Catholic University of Asuncion, Paraguay, April 2017
- *"Civic CrowdAnalytics,"* VTech, Asunción, Paraguay, December 2016
- *"Participa.PY: Generando espacios de participación cívica por medio de la tecnología,"* Expo Gobierno Abierto, Asunción, Paraguay, September 2016
- *"Voz y voto: Hacia una democracia más participativa,"* Partido Patria Querida, Asunción, Paraguay, July 2016
- *"Social Networks for Enhancing Idea Management Systems Used in the Civic Domain,"* Data and Democracy Group, CITRIS, UC Berkeley, Berkeley, California, USA, July 2014
- *"Agora 2.0: Increasing Engagement with Onsite Public Display,"* IdeaScale Webinar, October 2013

Invited Panelist

- *"Gamify Democracy,"* World Forum For Democracy, Strasbourg, France, November 2016

COLLABORATION IN RESEARCH COMMUNITIES	<ul style="list-style-type: none"> - Program Committee, International Conference on Collaboration Technologies and Systems, CTS 2016 - Reviewed scientific articles and papers for the following conferences and journals: WWW (Int. Conf. on World Wide Web), ISOC (Int. Conf. on Service Oriented Computing), CTS, ICEIS (Int. Conf. on Enterprise Information Systems), Academic Mindtrek, JSMO (Journal of Social Media for Organization)
EXPERIENCES AS SOFTWARE ENGINEER	<p>Software Engineer <i>OLPC project, NGO Paraguay Educa</i> <i>2010-2011</i></p> <ul style="list-style-type: none"> - Contributed to the developed of open-source educational software, such as Poll and Labyrinth - Developed an online a teacher performance system using Drupal CMS - Developed an open-source fingerprint attendance system (9,000 downloads) <p>Software Developer <i>OLPC pilot project, Catholic University of Asuncion</i> <i>2008</i></p> <ul style="list-style-type: none"> - Developed the educational game Club de Othello XO (30,000 downloads) <p>Front-End Developer <i>AISA</i> <i>2007</i></p> <ul style="list-style-type: none"> - Collaborated in the implementation of the front-end of an ERP system that controls the selling, billings, transportations, and clients of the company
TECHNICAL SKILLS	<p>Machine Learning. Classification (logistic, support vector machine, naïve bayes, decision tree, random forest), regression models (simple linear, multiple linear, polynomial), clustering (k-means, hierarchical)</p>

Statistical Methods. Parametric (ANOVA, t-test) and non-parametric methods (Kruskal-Wallis, Mann-Whitney, Wilcoxon), inferential statistics (hypothesis testing, confidence interval)

Software and Programming Languages. Python, SQL, R, iPython (pandas, scikit-learn, numpy), Javascript, HTML, CSS, Java

Scripting. Linux/Unix

LANGUAGES	Spanish (Native), English (Full professional proficiency), Italian (Limited working proficiency), Portuguese (Elementary proficiency)
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