

Jorge Saldivar

DATA SCIENTIST, RESEARCHER, AND SOFTWARE ENGINEER

EDUCATION	PhD Information and Communication Technologies, University of Trento, Italy 2017
	Informatics Engineering, Catholic University of Asuncion, Paraguay 2010
DATA SCIENCE PROJECTS	<ul style="list-style-type: none">- Motivation Factors and Participation Patterns in Crowdsourcing (~2k records). Applied exploratory data analysis (EDA) to study the profile of the participants of crowd-sourced civic participation processes. Employed non-parametric statistical tests (Wilcoxon, Spearman, Chi-square, Kruskal-Wallis, Friedman) to examine change in the motivation factors that drive people to crowdsourced civic participation processes. Used Logistic Regression to predict the odds of participants to stay engaged in crowdsourcing processes. (Tools: R, dplyr, ggplot2, repo: https://github.com/joausaga/finland-experiment-study)- The effectiveness of Social Sharing Practices (~35k records). Used Multivariate Linear Regression and parametric statistical tests (Pearson correlation, T-test) to study the effectiveness of the ubiquitous social media sharing buttons in increasing participation in online social communities (Tools: R, ggplot2, dplyr, reshape, repo: https://github.com/joausaga/imsn-study)- Collective and Individual Behavior in Online Communities (~300k records). Used K-means algorithm and non-parametric statistical tests (Chi-square, Kruskal-Wallis) to discover patterns in the collective behavior of online innovation communities (Tools: R, ggplot2, dplyr, repo: https://github.com/joausaga/collective-behavior-im-communities)- Politic Bots (~200k records). Employed exploratory data analysis (EDA) techniques (summary statistics and visualizations) to understand how social media bots and fake accounts are used to promote and manipulate information during electoral periods (Tools: Python, Pandas, Numpy, Matplot, MongoDB, repo: https://github.com/ParticipaPY/politic-bots)- Online Popularity of Movies (~10k records). Used exploratory data analysis (EDA) methods (summary statistics, visualizations, and correlation) to understand the factors that contribute to the online popularity of movies (Tools: Python, Pandas, Numpy, Matplot, repo: https://github.com/joausaga/moviesonlinepopularity)
LANGUAGES	Spanish (Native), English (Full professional proficiency), Italian (Limited working proficiency)
PROFESSIONAL EXPERIENCES	<p>Research Fellow <i>Catholic University of Asuncion - DEI, Asunción, Paraguay</i> 2016-Present</p> <ul style="list-style-type: none">- Coordinated the implementation of an analytics tool that uses machine learning (ML) and natural language processing (NLP) techniques (classification, clustering, concept extraction, sentiment analysis) to automate the analysis of crowdsourced textual data- Implemented a K-means algorithm to cluster similar documents- Applied K-means algorithm to discover patterns in the collective behavior of online innovation communities- Employed exploratory data analysis (EDA) to study the use of social media bots for political propaganda- Co-authored six papers in international conferences on the topics of Crowdsourcing, Collective Intelligence, and Applied Machine Learning

PhD Researcher

University of Trento - DISI, Trento, Italy

2011-2015

- Employed **non-parametric statistical tests** to examine the motivation factors that drive citizens to participate in crowdsourced civic participation processes
- Used **exploratory data analysis (EDA)** to study the profile of the participants of crowdsourced civic participation processes
- Applied **multivariate linear regression analysis** to study effectiveness of current social sharing practices
- **Co-authored five scientific articles in IEEE and ACM journals and international conferences on the topics of Crowdsourcing for Democracy and Collective Intelligence**

Visiting Scholar

University of California, Berkeley - CITRIS, California, USA

2014

- 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)
- **Co-authored a scientific paper on the topic of Crowdsourcing for Democracy**

Visiting Researcher

Analytics Lab, Hewlett Packard, Palo Alto, California, USA

2013

- Designed and implemented a web-based interactive analytic tool for conducting real-time visualization of large-scale parallel executed SQL queries
- **Filled the patent: Real-time monitoring and analysis of query execution (PCT/US2014/032133)**

Software Engineer

OLPC project, NGO Paraguay Educa, Asunción, Paraguay

2008-2011

- Contributed to the development of open-source educational software, such as Poll and Labyrinth
- Developed the educational game Club de Othello XO (30,000 downloads)
- Developed an open-source fingerprint attendance system (9,000 downloads)

Front-End Developer

AISA, Asunción, Paraguay

2007

- 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

Data Analytics and Machine Learning. Exploratory data analysis (correlation, location and variability estimation, visualization), statistical experiments and significance testing (hypothesis tests, t-tests, confidence intervals, ANOVA, chi-square, wilcox, kruskal-wallis), regression (simple linear regression, multiple linear regression), classification (logistic regression), clustering (k-means)

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

Data Visualization. ggplot2, jQuery Sparklines, JavaScript InfoVis Toolkit, Matplotlib

Scripting. Linux/Unix

PUBLICATIONS

Published **12 peer-reviewed papers** in relevant international conferences and journals in the following topics: Crowdsourcing, Collective Intelligence, E-Participation, Human-Computer Interaction, Virtual Reality, and Business Process Management (please refer to <http://me.jorgesaldivargalli.com/publications> for the complete list of my publications)