

Roberto Ulloa

Profile

Computer scientist, PhD

Areas of interest: Computer Simulations, Statistics, Data Science, Machine Learning

Languages and technical skills

Programming Languages: Python, R, Java, Octave/Matlab, PHP, C++, Netlogo

Web Developing/Platforms: HTML, CSS, Javascript, Django, Bootstrap, Wordpress

Databases: MySQL, PostgreSQL, SQLite

Others: Computer simulations, experimental design, data analysis, graph analysis, statistics

Education

- 09/2011 – 12/2016 Western University, Canada
PhD in Hispanic Studies (Computer Simulations) (90.3%)
 Thesis: *Cultural Diversity in Artificial Societies: Case Studies of the Maya Peoples*
- 03/2009 – 03/2011 University of Costa Rica, Costa Rica
MSc with Honors in Computer Science (Summa cum Laude, 94.5%)
 Thesis: *Use of randomization as a defense mechanism against inference of strategies in agent-based systems*
- 03/2002 – 03/2006 University of Costa Rica, Costa Rica
BSc with Honors in Computer Science (Magna cum Laude, 91.2%)

Academic Experience

- 05/2016 – present School of Computer Science and Informatics, University of Costa Rica
Researcher, *Application of de-anonymizing tasks to increase individuals' perceptions of privacy threats*, with Prof. G. Barrantes
- 10/2014 – 12/2016 Dpt. of Computer Science and Artificial Intelligence, University of Seville, Spain
Researcher; data analyst and developer (Java/Netlogo/R), *Cultural diversity in agent-based systems*, with Prof. F. Sancho
- 03/2015 – 07/2016 Applied Mathematics and Systems Research Institute, Autonomous National University of Mexico (UNAM)
Researcher; data analyst and developer (Python/R), *Computer models for social systems using game theory (PAPIIT IA102415)*, with Prof. T. Froese
- 06/2013 – 12/2015 Western University, Canada
Researcher; data analyst and developer (Javascript/CreateJS/CSS/HTML/R), *Cognitive psychology*, with C. Kacperski & Prof. C. Hall
- 09/2011 – 04/2013 Cultural Complexity Laboratory (CulturePlex), Western University, Canada
Computer Scientist; Frontend and backend developer (Django/Python/HTML/SQL/tesseract/grammar constructions),
 (1) *Festos: an infrastructure for scanning, OCR'ing, indexing and searching texts*
 (2) *Virtual assistant of language based on Natural Language Processing (NLP)*
- 11/2007 – 03/2011 School of Computer Science and Informatics, University of Costa Rica
Researcher; data analyst and developer (Java/SQL/R), *Using diversity for security in multi-agent systems*, with Prof. G. Barrantes
- 04/2008 – 06/2010 School of Computer Science and Informatics, University of Costa Rica
Lecturer, Computer Networks, Programming II (C++), Programming I (Java), Principles of Informatics, Microsoft Office and Internet Services
- 08/2006 – 11/2006 School of Computer Science and Informatics, University of Costa Rica
Researcher, *Analysis of security vulnerabilities*, with Prof. G. Barrantes

Work Experience (Corporate & Voluntary Work)

- 04/2017 – Present Gesellschaft für Innovative Marktforschung, Germany
Data Scientist / Developer (Python/SQL/R/Django)
- 05/2015 – 08/2015 Mitacs, Canada
Globalink Mentor, *Mentorship of international research interns*
- 05/2013 – 11/2013 Commas and Industry, Malaysia
Web Developer (HTML/CSS/Python/DjangoCMS/PHP/WordPress)
- 09/2010 – 04/2011 Raleigh International - Costa Rica & Nicaragua (raleighinternational.org)
Expedition Manager (2011) / **Project Manager** (2010) / **Participant** (2008)
- 11/2007 – 12/2009 Graduate Office/Center of Attention to Students with Disability/Volunteering Office, University of Costa Rica
Web application and server administrator (Drupal/Limesurvey), Developer (Access/SQL), Frontend and backend developer (HTML/CSS/PHP/MySQL)
- 03/2007 – 09/2007 Society for Wildlife Research and Environmental Education (SPVS), Brazil
Developer (Java/PostgreSQL)
- 09/2006 – 12/2006 National Social Security and Health Library (BINASSS), Costa Rican Social Security System (CCSS), Costa Rica
Server administrator (Linux Debian Servers)
- 12/2005 – 06/2006 United Nations Volunteers (UNV), UN Development Program (UNDP), Guatemala
IT Specialist, Knowledge Transfer
- 03/2005 – 11/2005 Department of Computer Science, University of Costa Rica
Network assistant (Web server configurations, network management, user support, physical installations)
- 2003 – 2010 Volunteer Program of the University of Costa Rica (voluntariado.ucr.ac.cr)

Books

- Ulloa, R. (2015). *Kivy - Interactive applications and games in Python*. (2nd ed.). Birmingham: Packt Publishing.
- Ulloa, R. (2013). *Kivy: Interactive applications in Python*. Birmingham: Packt Publishing.

Peer-reviewed Publications

- Ulloa, R. & Kacperski C. (in preparation). A Simulation of the Resilience of Cultural Diversity in the Face of Catastrophic Events.
- Ulloa, R. (2016). CulSim: A simulator of emergence and resilience of cultural diversity. *SoftwareX*, 5, 150-155. doi:10.1016/j.softx.2016.07.005
- Ulloa, R., Froese (2016), T. Nobility-targeting raids among the Classic Maya: Cooperation in scale-free networks persists under tournament attack when population size fluctuates. *Proceedings of the Artificial Life Conference 2016*. Cancun, Mexico: MIT press, 472-479. doi:10.7551/978-0-262-33936-0-ch077
- Kacperski, C., Ulloa, R., & Hall, C. (2016). Do athletes imagine being the best, or crossing the finish line first? A mixed methods analysis of construal levels in elite athletes' spontaneous imagery. *Journal of Mixed Methods Research*, 1–26. doi:10.1177/1558689816674563
- Ulloa, R., Kacperski, C., & Sancho, F. (2016). Institutions and cultural diversity: Effects of democratic and propaganda processes on local convergence and global diversity. *PLOS ONE*, 11(4), 1–26. doi:10.1371/journal.pone.0153334
- Ulloa, R (Technical Report, 2012). Recognition between Baroque and Renaissance Style of Classic Paintings. doi: 10.13140/RG.2.1.3154.9203

Ulloa, R. (2012). Snapshot of the position of a site in the Internet: Vector space model applied to external pages. In *Proceedings of the XXXVIII Latin American Informatics Conference*. 1–7. Medellin, Colombia. doi:10.1109/CLEI.2012.6427223

Ulloa, R., & Barrantes, E. G. (2009). Parallel opponent modelling with knowledge domain: Direct search of strategies in multi-agent systems. In *Proceedings of the XXXV Latin American Informatics Conference*. Pelotas, Brazil.

Ulloa, R., & Barrantes, E. G. (2008). Building a scenario for the simulation of attacks on systems of agents. In *Chilean Computer Sciences Proceedings*. Punta Arenas, Chile. <http://lahuen.dcc.uchile.cl/~jcc2008/libro.pdf>

Conference Presentations

Ulloa, R. (2016). CulSim: Emergence and Resilience of Cultural Diversity in a Computer Simulator. *3rd GESIS Computational Social Science Winter Symposium 2016*. Cologne, Germany. (poster)

Ulloa, R. (2016). Culsim: A Simulator of Emergence and Resilience of Cultural Diversity. Social Learning and Cultural Evolution. *XV Conference on the Synthesis and Simulation of Living Systems*. Cancun, Mexico. (workshop presentation, accepted)

Ulloa, R. (2016). Nobility-targeting raids among the Classic Maya: Cooperation in scale-free networks persists under tournament attack when population size fluctuates. *XV Conference on the Synthesis and Simulation of Living Systems*. Cancun, Mexico. (poster)

Kacperski, C., **Ulloa, R.** & Hall, C. R. (2014). A qualitative analysis of construal levels in sport imagery. *Performing under Pressure from 29.-31. May in Munich. Arbeitsgemeinschaft für Sportpsychologie (asp)*. Munich, Germany. (talk)

Suárez, J., de la Rosa, J. & **Ulloa, R.** (2013). Not Exactly Prima Facie: Understanding the Representation of the Human Through the Analysis of Faces in World Painting. *Digital Humanities 2013 Conference*. Lincoln, Nebraska, USA. (poster)

Ulloa, R. (2012). Snapshot of the position of a site in the Internet: Vector space model applied to external pages (pp. 1–7). *XXXVIII Latin American Informatics Conference*. Medellín, Colombia. (talk)

Ulloa, R., & Barrantes, E. G. (2009). Parallel opponent modelling with knowledge domain: Direct search of strategies in multiagent systems. *XXXV Latin American Informatics Conference*. Pelotas, Brazil. (talk)

Ulloa, R., & Barrantes, E. G. (2008). Building a scenario for the simulation of attacks on systems of agents. *Jornadas Chilenas de Computación*. Punta Arenas, Chile. (talk)

Scholarships, Awards and Distinctions

08/2016 **Graduate Research Scholarship (GRS)** - C\$6350, Western University, Canada

04/2016 **Graduate Thesis Research Award (GTRA)** - C\$1000, Western University, Canada

04/2015 **Ontario Graduate Scholarship (OGS)** - C\$15000, Ontario, Canada

04/2015 **Graduate Thesis Research Award (GTRA)** - C\$1000, Western University, Canada

03/2015 **Mitacs Globalink Research Award** - C\$4350, Western University, Canada

09/2013 **Award of Excellence**, USC Teaching Honor Roll, Western University, Canada

04/2011 **M.Sc. graduation with Honors (Summa Cum Laude)**, University of Costa Rica

03/2011 **Provost's Entrance Scholarship** - C\$4000, Faculty of Arts and Humanities, Western University, Canada

03/2011 **Western Graduate Research Scholarship (WGRS) & Graduate Teaching** - C\$30000 per year (2011-2013/2014-2016), Faculty of Arts and Humanities, Western University, Canada

03/2009 **Graduate Honor Scholarships**, yearly tuition waiver (~ \$5000 yearly) for average above 90 out of 100, University of Costa Rica

03/2011 **B.Sc. graduation with Honors (Magna Cum Laude)**, University of Costa Rica

03/2009 **Undergraduate Honor Scholarships**, yearly tuition waiver (~ \$4000 yearly) for average above 90 out of 100, University of Costa Rica

12/2001 **Honorable Mention**: 12th out of 21.038 in the admission test, University of Costa Rica

Recent Training

- 12/2016 – 03/2017 Machine Learning Online Course (with Andrew Ng), Stanford University, Coursera
12/2016 – present Heidelberg Python Meetup Group
02/2016 – 03/2016 Machine learning group, with Prof. F. Sancho, Department of Computer Science and Artificial Intelligence, University of Seville, Spain.

Languages

English (fluent), German (active learner), Portuguese (fluent), Spanish (native)