RESUME

Didier Augusto Vega-Oliveros

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For more information visit https://didiervega.github.io

PROFILE

Postdoctoral Research Fellow (FAPESP) at the Department of Computer Science, University of São Paulo – USP and research collaborator at Brazilian National Institute of Space Research (INPE). He has experience in Artificial Intelligence and Machine learning applied to Big Data systems for high-scalability. He holds a B.Sc degree in Computer and Systems Engineer from Universidad Nacional de Colombia and received his Masters and Ph.D. in Computer Science and Computational Mathematics at Universidade de São Paulo, Brazil. He was visiting researcher at Northeastern University, USA, under the supervision of Dr. Albert-Lázló Barabási; at Universidad de la Plata, Argentina, working with Dr. Federico Vazquez; and at Humboldt University of Berlin, Germany, in an international project led by Dr. Jürgens Kurths. He has participated in projects applied to industry and society, employing Computational Intelligence and Machine Learning methods for Big Data analysis, proposing scalable solutions with distributed, parallel and cloud computing systems. His research experience includes the study of Ubiquitous Computing, User-Computer Interaction (HCI) and multimodal interfaces for the development of intelligent systems. He also worked on research related to Complex Networks theory and their dynamical processes, such as the spreading of epidemics, rumors or opinions on social networks. Currently, his fields of interests encompass Machine Learning based on Complex Networks in the modeling of Climate systems for disasters risk reduction and management, and social networks analysis.

EDUCATION / TITLES

- 2017 – 2019 **Postdoctoral research fellow**
  Project: *Dynamical processes in complex network based on machine learning*
  Advisor: Zhao Liang
  Advisor: Elbert E. N. Macau
  Supported by São Paulo Research Foundation (FAPESP)
  Univeristy of Sao Paulo – USP and National Institute of Space Research – INPE, Brazil

- 2013 – 2017 **PhD in Computer Science**
  Title: *Rumors and Information Spreading on Social Networks*
  Supervisor: Francisco Aparecido Rodrigues
  Co- Supervisor: Luciano da Fontoura Costa
  Scholarship from National Council for Scientific and Technological Development (CNPq)
  Univeristy of Sao Paulo - USP, Brazil

- 2009 – 2011 **MSc in Computer Science**
  Title: *Media-Oriented Operators for Authoring Multimedia Documents: Interactors*
  Supervisor: Maria da Graça Campos Pimentel
  Scholarship from National Council for Scientific and Technological Development (CNPq)
  Univeristy of Sao Paulo - USP, Brazil

- 2003 – 2008 **Bachelor's degree in Computer Engineering**
  Title: *Mobile Virtual Network Operators (MVNOs) and Potential Actors in Colombia*
  Supervisor: Zoila Inés Ramos de Florez
  National University of Colombia, Bogotá, D.C., Colombia

COMPLEMENTARY FORMATION

- 2017 **Research Visitor** at Humboldt University of Berlin, Germany
  Invited by: Jürgens Kurths
  Supported by DFG-IGRK 1740/2 and FAPESP 2015/50122-0 joint project
- 2016 **Research Visitor** at National University of La Plata, Argentina
  Advisor: Federico Vázquez
  Supported by Santander Scholarship award
- 2014 **Visiting Scholar** at Center for Complex Network Research (CCNR)
  Advisor: Albert-László Barabási
  Northeastern University, United States of America
- 2008 **Undergraduate Exchange Student** at Institute of Mathematics and Computer Sciences (ICMC)
  Advisor: Maria da Graça Campos Pimentel
  Univeristy of Sao Paulo - USP, Brazil

RESEARCH EXPERIENCE

Currently with 20 academic works published **Google Scholar** *citations* 79, *h-index 6*, *i10-index* 4

Berton, L.; Lopes, A. A.; Vega-Oliveros, D. A.. A Comparison of Graph Construction Methods for Semi-Supervised Learning. In: International Joint Conference on Neural Networks (IJCNN), 2018, Rio de Janeiro, Brazil.	
Vega-Oliveros, D. A.; Berton, L.; Vazquez, F. Rodrigues, Rodrigues, F. A.. The Impact of Social Curiosity on Information Spreading on Networks. In: IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2017, Sydney, Australia, v. 0. p. 459-466.	Cited by 1
Vega-Oliveros, D. A.; Costa, Luciano da F.; Rodrigues, F. A. Rumor propagation with heterogeneous transmission in social networks. Journal of Statistical Mechanics: Theory and Experiment, v. 2017, n. 2, p. 023401.	Cited by 13
Berton, L.; Vega-Oliveros, D. A.; Valverde-Rebaza, J. C.; da Silva A. T.; Lopes, A. A. The Impact of Network Sampling on Relational Classification. In: 3rd Annual International Symposium on Information Management and Big Data (SIMBig), 2016, Cusco, Peru, p. 62-72.	Cited by 2
Vega-Oliveros, D. A.; Berton, L.; Lopes, A. A.; Rodrigues, F. A. Influence maximization based on the least influential spreaders. In: International Workshop on Social Influence Analysis (SocInf). 24th International Joint Conference on Artificial Intelligence (IJCAI), 2015, Buenos Aires, Argentina, p. 3-8.	Cited by 5
Vega-Oliveros, D. A.; Berton, L. Spreader Selection by Community to Maximize Information Diffusion in Social Networks. In: 2nd Annual International Symposium on Information Management and Big Data (SIMBig), 2015, Cusco, Peru, p. 73-82.	Cited by 2
Vega-Oliveros, D. A.; Berton, L.; Eberle, A. M.; Lopes, A. A.; Zhao, L. Regular graph construction for semi-supervised learning. Journal of Physics. Conference Series (Online), 2014, v. 490, p. 012022.	Cited by 10
Vega-Oliveros, D. A.; Martíns, D. S.; Pimentel, M. G. P. Media-oriented operators for authoring interactive multimedia documents generated from capture sessions. In: ACM Symposium on Applied Computing (SAC), 2011, TaiChung. Proceedings of the 2011 ACM Symposium on Applied	Cited by 7

PROFESSIONAL EXPERIENCE

- 02/2017 – 06/2017 **University Herminio Ometto, UNIARARAS**, Brazil. – Faculty of Engineering

  Assistant Professor at Faculty of Engineering teaching the courses of: Computer Programming I (classes A and B) and Computer Programming III (classes A, B, C, D, E, and G).

- 05/2011 - 01/2013 **Invit Information Services** – R&D team of Intelligence Agents and Semantic Framework

  Agentto project (www.agentto.com**):** Design and development of a Semantic Framework and intelligent agents for the processing of contextual data to conduct queries and inferences about high-level events of context and situation awareness, with modules projected to high scalability and performance in both the cloud and clients.

  04/2012 **Software Architect:** Promoted to technical leader who coordinates the Semantic Framework team

  Main activities:

  - ✓ Coordination and planning of team activities
  - ✓ Management the deployment of cloud applications
  - ✓ Architect and developer in the clients of a security alarm system activated by slaps (feature running in production)
  - ✓ Developer and designer of PTT (push-to-talk) infrastructure, client libraries and interface (feature running in production)
  - ✓ Architect and developer of a semantic framework based on ontologies and reasoning
  - ✓ Leader of research and adoption of CEP (Complex Event Processing), Semantic Web, Ubiquitous and Pervasive Computing, Context-Awareness and Situation-Awareness.
  - ✓ Management and planning of functional and non-functional tests

  05/2011 **Software Engineer**: Developer and designer in an interdisciplinary team for creating new product feature

  Main activities:

  - ✓ Proposal of agents architecture based on CEP (Complex Event Processing)
  - ✓ Developer in both server and client (Android and Windows Phone 7) of the protocol to communicate with the cloud (feature running in production)
  - ✓ Developer and designer of a feature that infers user's frequent places (running in production)
  - ✓ Design and development of abstraction layer for data persistence in various types of Azure storage
  - ✓ Design and development of product feature in Windows Phone and Android
  - ✓ Deployment of applications in Cloud Computing
  - ✓ Applied research, in combination with the Federal University of Uberlândia, in the areas of AI, Context/Situation-Awareness, Multimodal and Natural Interfaces and Natural Language Processing
  - ✓ Implementation of testing like unit and integration tests and performance, load and stress test
  - ✓ Mitigation of technical risks for the adoption and integration of new cutting-edge technologies
  - ✓ Participation in the implementation of SCRUM

- 03/2009 - 10/2009 **Intermidia lab at ICMC/USP** – TIDIA-Ae project (www.tidia-ae.usp.br)

  Software Engineer: Development of a player in NCLua and SMIL that enables the review and synchronization of captured data (chat session, video conferencing and electronic whiteboard) for the DiGaE tool (Distributed Gathering Environment) of the TIDIA-Sakai Project of Univesity of Sao Paulo.

KNOWLEDGES AND TECHNICAL SKILLS

- ✓ Cloud Computing
- ✓ Back-end software architectures
- ✓ OpenMP/MPI
- ✓ Ontologies
- ✓ XML, JSON, REST, SOAP
- ✓ ClickOnce
- ✓ SCRUM
- ✓ DevOps
- ✓ Agile Methodologies
- ✓ TDD, Usability test
- ✓ Complex Networks
- ✓ Machine learning
- ✓ Ubiquitous computing
- ✓ Human Computer Interaction
- ✓ WindowsPhone7, Android

AWARDS

- 2016 **Student Travel Award from SoFiA** – Latin American School on Data Analysis and Mathematical Modeling of Social Science, financed by CELFI – Latin American Center for Interdisciplinary Training.
- 2016 **Santander Scholarship** for Academic Exchange Visit
- 2015 **Student Travel Award from IJCAI** – International Joint Conferences on Artificial Intelligence.
- 2008 **Undergraduate Exchange Student Scholarship –** National University of Colombia.