RESUME

Didier Augusto Vega-Oliveros

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

PROFILE

He is a Postdoctoral Research at the Center for Complex Networks and Systems Research at Indiana University, Bloomington – USA. Self-motivated and proactive engeneer oriented to results, he leads and dynamically participates in aspects of the architecture, design, development, implementation, quality, and support during the lifecycle of the software product, always taking into consideration the big picture in all the phases. He has participated in projects applied to industry and society, researching and leading teams in Artificial Intelligence and Machine learning applied to Big Data systems, proposing scalable solutions with distributed, parallel and cloud computing systems on relational and Non-SQL databases. His research experience also includes the study of Ubiquitous Computing, User-Computer Interaction and multimodal interfaces for the development of adaptative and responsivess systems. 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. Professional strengths include effective communication skill, high motivation by challenges with innovative ability, adaptability to new technologies, and initiative to research and study new approaches to identify practical solutions.

EDUCATION / TITLES

- 2019 **Postdoctoral research**
  Project: *Spatiotemporal data analytics based on complex networks*
  Advisors: Santo Fortunato, Filippo Menczer, and Alessandro Flammini
  Supported by São Paulo Research Foundation (FAPESP)
  Indiana University, Center for Complex Networks and Systems Research – CNetS, USA

- 2017 – 2018 **Postdoctoral research**
  Project: *Dynamical processes in complex network based on machine learning*
  Advisors: Zhao Liang and 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*
  Supervisors: Francisco Aparecido Rodrigues and 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**
  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* 92, *h-index 7*, *i10-index* 4

Vega-Oliveros, D. A.; Cotacallapa, M.; Ferreira, L.; Qules, M.; Liang, Z.; Macau, E.; Cardoso, M. From spatio-temporal data to chronological networks: An application to wildfire analysis. In 34th ACM/SIGAPP Symposium On Applied Computing (SAC), 2019, Limassol, Cyprus. (Accepted and to appear)

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.

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.

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.

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.

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.

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.

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

PROFESSIONAL EXPERIENCE

- 04/2017 – 04/2018 **Sureale**, Brazil. – R&D in cloud services and business model

  Sureale project (sureale.com): I was a researcher and technical leader in Sureale project, the startup that is an evolution in marketing allowing ultra-realistic and interactive experiences in virtual architecture environments.

- 02/2017 – 06/2017 **University Herminio Ometto, UNIARARAS**, Brazil. – Faculty of Engineering **Assistant Professor** lecturing the courses Computer Programming I (2 groups) and III (5 groups).

- 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 features 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.