Paola **Valdivia**

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Overview

I am a researcher in the field of visual analytics, a practice that brings together data analysis, information visualization, HCI methods, and software development. My research focuses on network visual analysis, leveraging mathematical network models, and information visualization to create new analysis methods for large datasets. These projects led to several internationally peer-reviewed publications at IEEE VIS, Eurovis, and TVCG.

paolavaldivia
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/projects
Google Scholar

Expertise

visual analytics
network visualization
information visualization
graph signal processing

Foreign Languages

english	*fluent*
french	*professional*
spanish	*native*
portuguese	*fluent*

Professional experience

Research Engineer	Télécom Paris	Jun 2020 - *present*
Postdoctoral Researcher	Inria Saclay	Jun 2018 - May 2020
Visualization Engineer (remote)	Visibilia	Dec 2018 - Jul 2019
Research internship	Inria Saclay	Aug 2016 - Jul 2017
Research internship	New York University	Nov 2015

Education

University of São Paulo, Brazil	Ph.D. Computer Science	Dec 2013 - May 2018
University of São Paulo, Brazil	M.Sc. Computer Science	Aug 2011 - Nov 2013
San Pablo Catholic University, Peru	B.S. Informatics Engineering (Computer Science)	2005 - 2010

Publications

- Pister, A., Buono, P., Fekete, J. D., Plaisant, C., and **Valdivia, P.** (2020). *Integrating Prior Knowledge in Mixed Initiative Social Network Clustering*. to appear in IEEE Transactions on Visualization and Computer Graphics.
- **Valdivia, P.**, Buono, P., Plaisant C., Dufournaud N. and Fekete, J.-D. (2019). *Analyzing Dynamic Hypergraphs with Parallel Aggregated Ordered Hypergraph Visualization*. IEEE Transactions on Visualization and Computer Graphics.
- Ferreira, V., Valejo, A., **Valdivia, P.** and Valverde-Rebaza, J. (2019) *Exploiting Geographical Data to improve Recommender Systems for Business Opportunities in Urban Areas*. To appear in Proceedings of BRACIS 2019.
- Dias, M.D, **Valdivia, P.**, Petronetto, F., Nonato, L. G. (2018). *Graph Spectral Filtering for Network Simplification* . In Graphics, Patterns and Images (SIBGRAPI), 2018 31st SIBGRAPI-Conference. IEEE.
- Col, A. D., **Valdivia, P.**, Petronetto, F., Dias, F., Silva, C. T., and Nonato, L. G. (2017). *Wavelet-based visual analysis of dynamic networks*. IEEE Transactions on Visualization and Computer Graphics.
- Col, A. D., **Valdivia, P.**, Petronetto, F., Dias, F., Silva, C. T., and Nonato, L. G. (2017). *Wavelet-based visual analysis for data exploration*. Computing in Science Engineering.
- Dias, F., Mansour, M. R., **Valdivia, P.**, Cousty, J., and Najman, L. (2017). *Watersheds on Hypergraphs for Data Clustering*. In International Symposium on Mathematical Morphology and Its Applications to Signal and Image Processing. Springer, Cham.
- **Valdivia, P.**, Dias, F., Petronetto, F., Silva, C. T., and Nonato, L. G. (2015). *Wavelet-based visualization of time-varying data on graphs*. In Visual Analytics Science and Technology (VAST), 2015 IEEE Conference.
- Søren Knudsen, Jan Aerts, Daniel Archambault, Remco Chang, Jean-Daniel Fekete, **Valdivia, P.** et al. (2019) *Unifying the framework of Multi-Layer Network and Visual Analytics. Visual Analytics of Multilayer Networks Across Disciplines*, Dagstuhl Reports.
- **Valdivia, P.**, Cedrim, D., Petronetto, F., Paiva, A., and Nonato, L. G. (2013). *Normal Correction towards Smoothing Point-Based Surfaces*. In Graphics, Patterns and Images (SIBGRAPI), 2013 26th SIBGRAPI-Conference. IEEE.

Short papers

- Tovanich, N., Pister, A., Richer, G., **Valdivia, P.**, Fekete, J. D., Prieur, C., and Isenberg, P. (2020). *GraphletMatchMaker: Visual Analytics Approaches to Graph Matching in Cybersecurity Communities*. IEEE Visual Analytics Science and Technology, VAST Challenge.
- **Valdivia, P.**, Buono, P., Plaisant C., Dufournaud N. and Fekete, J.-D. (2018). *Using Dynamic Hypergraphs to Reveal the Evolution of the Business Network of a 17th Century French Woman Merchant*. VIS 2018-3rd Workshop on Visualization for the Digital Humanities.

Posters

- **Valdivia, P.**, Buono, P., and Fekete, J.-D. (2017). *Hypenet: Visualizing Dynamic Hypergraphs*. In EuroVis 2017 - Posters. The Eurographics Association.
- Dimara, E., **Valdivia, P.**, and Kinkeldey, C. (2017). *DcPAIRS: A Pairs Plot Based Decision Support System*. In EuroVis 2017 - Posters. The Eurographics Association.

Presentations and Invited Talks

- *Exploration visuelle d'hypergraphes dynamiques* at Institut national d'études démographiques (Ined). June, 2019.
- *Analyzing Dynamic Hypergraphs with Parallel Aggregated Ordered Hypergraph Visualization* at the Sunbelt Virtual Conference. July, 2020.
- *Analyzing Dynamic Hypergraphs with Parallel Aggregated Ordered Hypergraph Visualization* at Visual Analytics seminar series at PNNL (Pacific Northwest National Laboratory). December, 2020.

Research prototypes

- PK-clustering. Prototype for creating meaningful clusters in social networks.
  http://paovis.ddns.net/paoh.html
- Paohvis. Prototype for visualizing dynamic multi-entity relationships.
  http://www.aviz.fr/paohvis/
- Waviz. Prototype for analyzing spatio-temporal data based on graph signal porcessing.
  https://www.paolavaldivia.dev/waviz/
- Siion. Prototype for showing the best potential regions for opening a business in the city of São Paulo.
  http://siion.visibilia.net.br
- Dynamic Network Explorer. Prototype for analyzing dynamic networks based on graph signal porcessing.
  https://www.paolavaldivia.dev/dynnet_wavelet/
- Networkcube. Reimplemented the matrix visualization for exploring networks.
  http://networkcube.net/