



# Nicolas Hidalgo

**Assistant Professor**

**Escuela de Informática y Telecomunicaciones**

**Facultad de Ingeniería**

**Universidad Diego Portales**

Av. Ejercito Libertador 441, SANTIAGO, CHILE.  
(+56) 2 2676 8135 - [nicolas.hidalgoc@mail.udp.cl](mailto:nicolas.hidalgoc@mail.udp.cl)

## Education

**Postdoc at Yahoo! Labs Santiago [2012]**

**Docteur en Informatique , UPMC/INRIA [2011]**

INRIA/Université Pierre et Marie Curie (Paris 6), Paris, France.

**M.Sc Information Engineering [2008]**

Universidad Técnica Federico Santa María, Valparaíso, Chile.

**Informatics Engineering Professional Degree [2008]**

Universidad Técnica Federico Santa María, Valparaíso, Chile.

**Diploma in University Teaching [2015]**

Universidad de Santiago de Chile, Santiago, Chile.

## Research Area

Large scale distributed systems: scalability & performance.

## Research Grants and Awards

**STIC-AMSUD 2017**, Parallel and Distributed Metaheuristics for Bioinformatics (PadMetBio), researcher. 2017-2018.

**FONDEF IDEa (Dos Etapas), código ID15I10560** : Plataforma de Apoyo a la Gestión de Emergencia y Aplicaciones, Alternate Director, researcher. 2016 - 2017.

**Centro de Biotecnología y Bioingeniería – CeBiB**, researcher, Centro Basal código FB0001 CONICYT, 2014 -

**PMI-InEs-USACH**: Despliegue Ágil de Aplicaciones de Apoyo a la Gestión de Desastres de Origen Natural y Caso de Estudio en Sismología. Director and researcher, 2014.

**Associated Team INRIA**: Armada (hARnessing MAsive DATa). Researcher chilean team, 2014-2016.

**DICYT-USACH 061419HC:** Escalabilidad y Uso Eficiente de Energía Empleando Set-Top-Boxes. Director and researcher, 2014-2016.

**MINCYT-CONICYT CH/12/04:** Planeación de Capacidad en Centros de Datos (Exclusivos y Compartidos) Para Motores de Búsqueda Escalables Para la Web. Researcher, 2014.

**FONDEF Idea CA12i10314:** Procesamiento Masivo de Eventos en Tiempo Real. Researcher, 2013-2014.

**STIC-AMSUD 13-STIC-11:** RESPOND: Reputation and Energy aware Search for supPORTing Natural Disasters. Researcher, 2013-2014.

**Santander Research Grant,** “Young Lecturers and Researchers for Latin America”, 2016.

**Conicyt-INRIA Ph.D. Studies Grant,** 2008-2012.

## Journal Publications

N. Hidalgo, D. Wladdimiro, and E. Rosas. *Self-adaptive processing graph with operator fission for elastic stream processing*. Journal of Systems and Software Volume 127, Pages 205-216, May 2017 (ISI).

E. Rosas, N. Hidalgo, V. Gil-Costa, C. Bonacic, M. Marin, H. Senger, L. Arantes, C. Marcondes, O. Marin, *Survey on Simulation for Mobile Ad-Hoc Communication for Disaster Scenarios*. Journal of Computer Science and Technology, Volume 31, Issue 2, March 2016, Pages 326-349, ISSN: 1000-9000 (ISI)

N. Hidalgo, L. Arantes, P. Sens, X. Bonnaire, *ECHO: Efficient Complex Query over DHT Overlays*, Journal of Parallel and Distributed Computing, Volume 88, February 2016, Pages 31-45, ISSN 0743-7315 (ISI).

E. Rosas, N. Hidalgo, M. Marin, V. Gil-Costa, *Web search results caching service for structured P2P networks*, Future Generation Computer Systems, Volume 30, January 2014, Pages 254-264, ISSN 0167-739X (ISI).

## Conferences Publications

V. Gil-Costa, N. Hidalgo, E. Rosas, M. Marin. *A Dynamic Load Balance Algorithm for the S4 Parallel Stream Processing Engine*. Computer Architecture and High Performance Computing Workshops (SBAC-W) (2016) (Scopus)

D. Wladdimiro, P. Gonzalez-Cantergiani, N. Hidalgo, E. Rosas. *Disaster Management Platform to Support Real-Time Analytics*, The 3rd International Conference on Information and Communication Technologies for Disaster Management (ICT-DM'2016), Vienna, Austria (Scopus).

I. Escobar, N. Hidalgo, M. Inostroza-Ponta, M. Marín, E. Rosas and M. Dorn. *Evaluation of a combined energy fitness function for a distributed memetic algorithm to tackle the 3D protein structure prediction problem*. 2016 35th International Conference of the Chilean Computer Science Society (SCCC), Valparaíso, Chile (Scopus).

F. Garay, E. Rosas, N. Hidalgo, *Reliable routing protocol for Delay Tolerant Networks*, The 21st IEEE International Conference on Parallel and Distributed Systems (ICPADS 2015), Melbourne, Australia (Scopus).

E. Rosas, F. Garay, N. Hidalgo, O. Marin, *Mobility-aware DTN protocols for post-disaster scenarios*, The 2nd International Conference on Information and Communication Technologies for Disaster Management (ICT-DM'2015), Rennes, France (Scopus).

N. Hidalgo, E. Rosas, "Self-organized Architecture for Sharing Data Streams at Large Scale", ICAS 2015, The Eleventh International Conference on Autonomic and Autonomous Systems, Rome, Italy (Scopus).

V. Gil-Costa, E. Rosas, N. Hidalgo, M. Marin, "Simulation Model for energy assessment in ISP and Web Search Engine collaboration", Summer Simulation Multi-Conference (SummerSim 2014), July 2014, Monterrey, CA, USA (Scopus).

J. Morales, E. Rosas, N. Hidalgo, "Symbiosis: Sharing mobile resources for stream processing", The International Workshop on Distributed Mobile Systems & Services DMSS, June 2014 – Madeira, Portugal (Scopus).

N. Hidalgo, E. Rosas, M. Marin, V. Gil-Costa, "Assessing energy efficiency in ISP and Web Search Engine collaboration", The 10th International Symposium on Frontiers of Information Systems and Network Applications (FINA 2014), May 2014, Victoria, Canada (Scopus).

E. Rosas, N. Hidalgo, M. Marin. Two-Level Result Caching for Web Search Queries on Structured P2P Networks. ICPADS 2012: 221 - 228, ISBN 978-1-4673-4565-1 DOI: 10.1109/ICPADS.2012.39, IEEE CS Press (Scopus).

N. Hidalgo, E. Rosas, L. Arantes, O. Marin, P. Sens, X. Bonnaire: Optimized Range Queries for Large Scale Networks. AINA 2012: 438-445, ISBN 987-1-4673-0714-7, DOI: 10.1109/AINA.2012.32, IEEE CS Press (Scopus)

N. Hidalgo, L. Arantes, P. Sens, X. Bonnaire. A Tabu Based Cache to Improve Latency and Load Balancing on Prefix Trees. The 17th International Conference on Parallel and Distributed Systems (ICPADS), December 2011, Tainan, Taiwan, Pages 557-564, ISBN: 978-076954576-9 DOI: 10.1109/ICPADS.2011.18, IEEE CS Press (Scopus).

N.Hidalgo, E.Rosas, L. Arantes, O. Marin, P. Sens, X. Bonnaire. DRing: A Layered Scheme for Range Queries over DHTs. CIT 2011, ISBN: 978-076954388-8, DOI: 10.1109/CIT.2011.100, IEEE CS Press (Scopus).

N.Hidalgo, L.Arantes, P.Sens, X.Bonnaire. An Aggregation-Based Routing Protocol for Structured Peer to Peer Overlay Networks. Second International Conference on Advances in P2P Systems (AP2PS), October 2010, Florence, Italy, Pages 76-81, ISBN: 978-161208102-1 (Scopus).

## Patents

E.Rosas, N.Hidalgo, V.Gil-Costa. Push/Pull Parallelization for Elasticity and Load Balance in Distributed Stream Processing Engines. **US Patent Number** 2016018837; Application Number 14/583228 (*application*).

## Journals Reviews

IEEE TNSM Special Issue on "Advances in Management of Softwarized Networks"

Peer-to-Peer Networking and Applications (PPNA).

Future Generation Computer Systems (FGCS).

IEEE Intelligent Systems.

## Programs Committee

ICT-DM 2017

SSN 2017.

ISNCC 2017.

SBAC-PAD 2016.

SCCC 2016.

SSN 2016.

ISNCC 2016.

LANCOMM 2016.

JCC SDP Track 2015.

SSN 2015.

Workshop JCC WSDP 2014.

## Organization Committee

JCC SDP Track 2017.

SIGIR 2015.

JCC SDP Track 2015.

Workshop JCC WSDP 2014.

## Teaching Experience

Computer Architectures (Undergraduate)

Distributed Systems (Undergraduate)

Computer Networks (Undergraduate)

Computer Programming (Undergraduate)

Large Scale Distributed Systems (graduate) (2013 - now).

## Advising

Claudio Hernandez, Mecanismo de análisis de precision de predictores para sistemas de procesamiento de streams con aprovisionamiento dinámico. Ingeniería Civil en informática, Universidad de Santiago de Chile, 2017.

Felipe Garay, Delay tolerant network para escenarios de desastres. Magister en Ciencias de la Ingeniería mención Informática, Universidad de Santiago de Chile, 2017.

Jefferson Morales, Modelo para la integración de recursos de mobile computing en sistemas distribuidos de procesamiento streaming. Magister en Ciencias de la Ingeniería mención Informática, Universidad de Santiago de Chile, 2017.

Fernando Ormeño, Actualización del proceso de registro y liquidación de operaciones internacionales. Ingeniería Civil en Informática, Universidad de Santiago de Chile, 2016.

Esteban Abarca, Sistema escalable para la detección de necesidades en escenarios de catástrofe natural. Ingeniería Civil en informática, Universidad de Santiago de Chile, 2016.

Daniel Wladdimiro, Modelo elástico de replicación de operadores para un sistema de procesamiento de Stream}. Magister en Ciencias de la Ingeniería mención Informática, Universidad de Santiago de Chile, 2015.

Nicolas Aceituno, Implementación de un sistema cache sobre set-top boxes para la reducción de energía. Ingeniería Ejecución en informática, Universidad de Santiago de Chile, 2013.

## Professional Experience

Assistant Professor, Universidad Diego Portales (2017- present).

Assistant Professor, Universidad de Santiago de Chile (2013-2017).

Postdoctoral Position, Yahoo! Labs Santiago (2011-2013)

## Languages

English, French, Spanish

## Hobbies

Soccer, Tennis, Photography.