

## Guido R. Lagos

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<http://www2.isye.gatech.edu/~grlb3>

### RESEARCH INTERESTS

- \* Methodology of simulation \* Stochastic processes \* Rare-event analysis
- \* Stochastic Networks \* Markov Chain Monte Carlo methods \* Data Sciences
- \* Applied Probability \* Optimization under uncertainty \* Operations research

### EDUCATION

- GEORGIA INSTITUTE OF TECHNOLOGY Atlanta, GA  
*Ph.D. in Operations Research* Spring 2017  
School of Industrial & Systems Engineering 3.91 cumulative GPA
- UNIVERSIDAD DE CHILE Santiago, Chile  
*M.Sc. in Operations Management* 2011  
Department of Industrial Engineering GPA 6.5 (1.0-7.0 scale)  
*Mathematical Civil Engineer* (M.Sc. in Applied Math equivalent) 2011  
Department of Mathematical Engineering GPA 7.0 (1.0-7.0 scale)  
*B.Sc. in Engineering Sciences, major in Mathematics* 2009  
Department of Mathematical Engineering GPA 5.5 (1.0-7.0 scale)

### RESEARCH EXPERIENCE

- *Postdoctoral Associate, Center for Mathematical Modeling, Universidad de Chile*  
*Associate Researcher, Universidad Adolfo Ibáñez* 01/2017 to 12/2017  
Tutor: Javiera Barrera, <http://jbarrera.uai.cl>.
- *Visiting Student / Research Staff, Columbia University* 01/2016 to 12/2016  
Data Sciences Institute and Department of Industrial Engineering and Operations Research
- *Graduate Research Assistant, Georgia Tech* 08/2011 to 12/2016  
*Research topics:* \* Sensitivity analysis of stochastic networks. \* Exact simulation methods for rare events of heavy-tailed stochastic processes. \* Weak convergence limits of discretized diffusion processes.  
Advisor: Ton Dieker, <http://www.columbia.edu/~ad3217>.
- *Visiting researcher: University of Pittsburgh* 03-04/2011  
*Research topic:* Restricted risk measures and robust optimization.  
Host: Juan Pablo Vielma, <http://www.mit.edu/~jvielma>.
- *Research Assistant, Universidad Adolfo Ibáñez* 08/2010 to 08/2011  
*Research topic:* stochastic optimization of multi-period inventory planning.  
Advisor: Bernardo K. Pagnoncelli, <http://bernardokp.uai.cl>.
- *Graduate Research Assistant, Universidad de Chile* 08/2009 to 08/2011  
*Research topic:* robust and stochastic planning for large scale open-pit mining problems.  
Advisors: Daniel Espinoza, <http://www.dii.uchile.cl/~daespino>, Eduardo Moreno, <http://emoreno.uai.cl>.

## PUBLICATIONS

- A.B. Dieker, G. Lagos (2017). “On the Euler discretization error of Brownian motion about random times”. Submitted, see arXiv:1708.04356.
- A.B. Dieker, G. Lagos (2017). “A Dichotomy for Sampling Barrier-Crossing Events of Random Walks with Regularly Varying Tails”. Accepted for publication by the Applied Probability Trust in the *Journal of Applied Probability* 54.4, December 2017.
- D. Espinoza, G. Lagos, E. Moreno and J.P. Vielma (2015). “Restricted risk measures and robust optimization”. In *European Journal of Operations Research*, vol. 241, 3, pp. 771–782.
- D. Espinoza, G. Lagos, E. Moreno and J.P. Vielma (2013). “Risk averse approaches in open-pit production planning under ore grade uncertainty: a Ultimate Pit study”. In *Proceedings of APCOM 2013 - Applications of Computers and Operations Research in the Mineral Industry*, pp. 492-501.
- J. Amaya, D. Espinoza, G. Lagos, E. Moreno and J.P. Vielma (2011). “Robust Planning for an Open-Pit Mining Problem under Ore-Grade Uncertainty”. In *Proceedings of LAGOS 2011: VI Latin-American Algorithms, Graphs and Optimization Symposium, Electronic Notes on Discrete Mathematics*, 37, pp. 15–20.

## DISTINCTIONS & GRANTS

- First place, INFORMS *Applied Probability Society* Student Paper Competition, October 2017. The authors of the three other finalist papers were: Zhengyuan Zhou (Stanford), Andrew Li (MIT), and Thodoris Lykouris and Daniel Freund (Cornell).
- *Algorithms & Randomness Center Student Fellowship*, Georgia Tech, Fall 2014.
- *Kiplinger Fellowship*, Georgia Tech, August 2011 and August 2012.
- *Becas Chile-CONICYT Ph.D. abroad scholarship*, Chile, November 2010.
- *Outstanding Student Award*, School of Engineering Sciences, Universidad de Chile, 2004–2005.

## WORKSHOPS & SEMINARS

- *Science Park Informal Probability Meetings*, Nov 2017  
Centrum Wiskunde & Informatica (CWI), Amsterdam, The Netherlands
- *INFORMS Annual Meeting 2017*, Houston, TX, USA Oct 2017
- *INFORMS 19th Applied Probability Society Conference*, Chicago, IL, USA Jul 2017
- *INFORMS Annual Meeting 2016*, Nashville, TN, USA Nov 2016
- *Winter Simulation Conference 2014*, Savannah, GA, USA Dec 2014
- *INFORMS Annual Meeting 2014*, San Francisco, CA, USA Nov 2014  
Title: “Sampling Rare Events of Random Walks with Regularly Varying Increments: A Dichotomy”
- *INFORMS Annual Meeting 2012*, Phoenix, AZ, USA Oct 2012  
Title: “Robust Planning for an Open-Pit Mining Problem under Ore-Grade Uncertainty”
- *ICCOPT 2010*, Santiago, Chile Jul 2010
- *ALIO-INFORMS Meeting 2010*, Buenos Aires, Argentina Jul 2010  
Title: “Robustness and Recourse for the Single Period Open-pit Problem”
- *Ist Winter School on Discrete Mathematics*, Codegua, Chile Jul 2010

## TEACHING EXPERIENCE

- *Instructor, Universidad Adolfo Ibáñez*  
Course: *Advanced Simulation* (Spring 2017).
- *Instructor, Georgia Tech*  
Course: *Stochastic Manufacturing & Service Systems* (Spring 2015).
- *Participant of the INSPIRE<sup>2</sup> Workshop at Georgia Tech (Summer 2014)*  
Two-day workshop organized by the *American Society of Engineering Education* (ASEE) jointly with Georgia Tech's *Center for Enhancing of Teaching and Learning* (CETL). Workshop on teaching techniques in STEM disciplines that promote an effective learning environment. Emphasis was put on techniques for active, collaborative and inductive learning.
- *Graduate Teaching Assistant, Georgia Tech*  
Courses: *Engineering Optimization* (Summer 2012), *Probabilistic Models* (Fall 2012) and *Stochastic Manufacturing & Service Systems* (Summer 2014).
- *Undergraduate Teaching Assistant, Universidad de Chile*  
Courses: *Linear Algebra* (2007–2008), *Numerical Calculus* (2006–2007) and *Statistics* (2007–2009).

## SERVICE

- Organizer of the *Data Sciences* reading group for the *Industrial Engineering and Operations Research Group* at Universidad Adolfo Ibáñez (2017).
- Reviewer for *Operations Research* journal
- Student Member of the *Institute for Operations Research & Management Sciences* (INFORMS), INFORMS Applied Probability Society, and INFORMS Optimization Society.
- Founder and organizer of the *Student Applied Probability & Simulation (SAPS) Seminar*, School of Industrial & Systems Engineering, Georgia Tech, 05/2014 to 12/2015.

## INDUSTRY EXPERIENCE

- *Consulting Engineer, JRI Ingeniería S.A.; Chile* 11/2010 to 12/2010  
Designed an optimal resource allocation method for wagon service pits. Used data analysis tools and queueing models.
- *Intern, Institute for Cell Dynamics and Biotechnology, Chile* Summer 2009  
Programmed several data clustering techniques for use in functional genomics.
- *Intern, Sistemas Integrales Ltda., Chile* Summer 2008  
Programmed a graphical calculation method for error estimation in sampling.
- *Intern, Institute for Mining and Metallurgy (IM2), Chile* Summer 2007  
Developed and programmed a model for freezing prediction in mining pipelines.

## PROGRAMMING SKILLS

- JAVA, C (beginner), UNIX Bash shell scripting, PBS scripting for High Performance Computing (HPC) in clusters, Visual Basic.
- *Mathematical software*: MATLAB, SCILAB, Mathematica, AMPL, OPL.

## EXTRA-CURRICULAR ACTIVITIES

- *Bicycling* since 2007  
Founder of the institutional student group *Pedalea! Beauchef* at Universidad de Chile. *Pedalea! Beauchef* has more than 200 affiliated students, and since 2008 provides approx. 10 weekly hours of free bike repair services and tutoring.

- *Swimming* since 2009  
Participation in the swimming team of the *Faculty of Physical Sciences and Mathematics* of Universidad de Chile, 2009–2011.
- *Bassoon performing* 1999--2002  
Studies of bassoon performing, harmony and musical theory. Winner of the grant *Fundación de Orquestas Infantiles y Juveniles de Chile* in its 2001 edition.
- *African and afro-latin percussion*, autodidactic hobby. since 2005

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