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Personal Information

Date of birth: December 25th 1980

Citizenship: Brazilian and Italian

Civil Status: Married, 2 children

Education

- **Pontifical Catholic University of Rio de Janeiro (PUC-Rio)** Brazil
  Research Scholar at Georgia Tech for one year, 2007
  Ph.D., Applied Mathematics, 2009.
- **Pontifical Catholic University of Rio de Janeiro (PUC-Rio)** Brazil
  M.Sc., Applied Mathematics, 2004
- **Pontifical Catholic University of Rio de Janeiro (PUC-Rio)** Brazil
  B.S., Pure Mathematics, 2002

Work history

- Associate Professor at Universidad Adolfo Ibáñez, Business School, Santiago, Chile.
  2015 - present.
- Assistant Professor at Universidad Adolfo Ibáñez, Business School, Santiago, Chile.
  2009 - 2014.

Publications

- **Chance-constrained problems and rare events: an importance sampling approach**
  J. Barrera, T. Homem-de-Mello, E. Moreno, B.K. Pagnoncelli, G. Canessa
  Accepted at Mathematical Programming, 2015.
- **The optimal harvesting problem under price uncertainty: the risk averse case**
  A. Piazza and B.K. Pagnoncelli
  Accepted at Annals of Operations Research, 2015.
- **Risk aversion in multistage stochastic programming: a modeling and algorithmic perspective**
  T. Homem-de-Mello and B.K. Pagnoncelli
  Accepted at European Journal of Operational Research, 2015.

- **The stochastic Mitra-Wan forestry model: risk neutral and risk averse cases**
  A. Piazza and B.K. Pagnoncelli
  Journal of Economics 115(2), 175-194, 2015.

- **Credit risk assessment of fixed income portfolios using explicit expressions**
  A. Cifuentes and B.K. Pagnoncelli
  Finance Research Letters 11(3), 224-230, 2014.

- **Demistifying credit risk derivatives and securitization: introducing the basic ideas to undergraduates**
  B.K. Pagnoncelli and A. Cifuentes
  Journal of Derivatives 22(2), 110-118, 2014.

- **The optimal harvesting problem under price uncertainty**
  A. Piazza and B.K. Pagnoncelli
  Annals of Operations Research 217(1), 425-445, 2014.

- **Risk-return trade-off with the scenario approach in practice: a case study in portfolio selection**
  B.K. Pagnoncelli, D. Reich and M.C. Campi.
  Journal of Optimization Theory and Applications 155(2), 707-722, 2012.

- **A provisioning problem with stochastic payments**
  B.K. Pagnoncelli and S. Vanduffel
  European Journal of Operational Research, 221(2) 445-453, 2012.

- **Computational study of a chance-constrained portfolio problem**
  B.K. Pagnoncelli, S. Ahmed and A. Shapiro
  Journal of Optimization Theory and Applications 142(2), 399-416, 2009.

- **Cournot Equilibrium: modern techniques applied to an old problem**
  B.K. Pagnoncelli, C.F.B. Palmeira, M.A.K. Schnoor and R. Cayres
  Journal of Interdisciplinary Mathematics 11(5), 601-616, 2008.

- **Transaction costs in collective investments (in Portuguese)**
  A. Azevedo, B.K. Pagnoncelli, C. Tomei
  Revista Brasileira de Economia 63(4), 261-270, 2009.

- **Random linear systems (in Portuguese)**
  B.K. Pagnoncelli, C.F.B. Palmeira and H. Lopes
  Matemtica Universitria 45, 44-50, 2009.

- B.K. Pagnoncelli
  Sample average approximation for chance-constrained programming
  PhD thesis

- B.K. Pagnoncelli
  Applications of the tensor product in numerical analysis
  Masters Dissertation (in Portuguese)

Ongoing work

- **A risk averse approach to the optimal capacity problem in the airline cargo industry**
  M. Wada, B.K. Pagnoncelli, F. Delgado
  Submitted to Journal of the Operational Research Society, 2015.

- **Stochastic optimization model for air cargo allocation in the network of passenger's flights**
  R. Trincado, B.K. Pagnoncelli, F. Delgado
  In preparation, 2015.

- **On the Actual Behavior of Credit Derivatives Based on Homogeneous Reference Portfolios**
  F. Hawas, B.K. Pagnoncelli, A. Cifuentes
  In preparation, 2015.

- **Cutoff grade optimization revisited: a study of Lane's Algorithm**
  M. Goycoolea, B.K. Pagnoncelli, A. Piazza, D. Sauré
  In preparation, 2015.

- **Microgrid Energy Management with Renewables and Storage**
  V. Foucher, B.K. Pagnoncelli, T. Homem-de-Mello, R. Carrasco
  In preparation, 2015.

- **Solving life-cycle problems using multistage stochastic programming**
  J. García, B.K. Pagnoncelli, T. Homem-de-Mello, P. Castañeda
  In preparation, 2015.

- **A Decomposition Method for Two-Stage Stochastic Programs with Quadratic Utilities**
  S. Arpon, B.K. Pagnoncelli, T. Homem-de-Mello
  In preparation, 2015.

- **IIS Branch-and-Cut Approach for Stochastic Integer Programs with Probabilistic Constraints** J. A. Gallego-Arrubla, L. Ntaimo, B.K. Pagnoncelli, G. Canessa
  In preparation, 2015.

Conference Proceedings

- B.K. Pagnoncelli, S. Ahmed and A. Shapiro
  Computational study of a chance constrained portfolio selection problem
  XIV CLAIO, Cartagena, Colombia, 2008.

- B.K. Pagnoncelli, H.J. Bortolossi and C. Tomei
  A geometric approach to hydrothermal scheduling with variable production coefficient
  5th ICDSA, Morehouse College, Atlanta, GA, USA, 2007.

- B.K. Pagnoncelli and H.J Bortolossi
  Introduction to choice under uncertainty (in Portuguese)
  III Bi-Annual meeting of Brazilian Mathematical Society, UFG, Goiânia, GO, Brazil, 2006.

- B.K. Pagnoncelli and C.F.B. Palmeira
  Discrete dynamics applied to economics (in Portuguese)
  III Bi-Annual meeting of Brazilian Mathematical Society, UFG, Goiânia, GO, Brazil, 2006.
- B.K. Pagnoncelli, G. Enciso, D. Schmidt, S. Bayram, A. DeWitt, H. Fernando, J.A.S. Hameed and J. Kao
  Data to knowledge in pharmaceutical research
  Mathematical Modelling in Industry Workshop, IMA, University of Minnesota, MN, USA 2004
- B.K. Pagnoncelli and H.J. Bortolossi
  Interior point methods and the hydrothermal scheduling problem
  Scientific Initiation yearly proceedings, PUC-Rio, 2002

Consulting and Business

- 40-hour course at Petrobras on Stochastic Programming, with T. Homem-de-Mello, 2014.
- Founder and Creative Director of GameLab (http://www.gamelabeducation.com/en/), a company that produces digital games for the classroom, since 2013. The company won $100,000 USD in seed fund from the Chilean government, and the games have been used in several Universities all over the world.

Press

- GameLab
  - El mostrador newspaper, November the 13th, 2015.
  - El Mercurio newspaper, November the 4th 2015 and January the 26th, 2015.
  - Estrategia newspaper, March 10th, 2014.
  - CNN Chile, 2-minute program on GameLab.
  - PITCH (Shark Tank type of program). GameLab was one of the 24 out of 180 companies selected to pitch on TV for a group of 4 investors in a 3-minute pitch.
- Research and opinion pieces:
  - Pulso newspaper - 1 page article about my research with A. Cifuentes on default correlation. (March 11th, 2014)
  - "Competitive Simulations: game on". 1000-words article in OR/MS with A. Seidmann, August 2015.

Presentations and courses

- **22nd ISMP, Pittsburgh, United States, 2015**
  Risk Aversion in Multistage Stochastic Programming: A Modeling and Algorithmic Perspective
  30-minute presentation
- **SESO, Paris, France, 2015**
  Microgrid Energy Management with Renewables and Storage
  45-minute presentation

- **INFORMS Student Chapter at Texas A&M, College Station, United States, 2015**
  From two stage to multistage risk averse stochastic programming
  50-minute presentation
- **INFORMS, San Francisco, United States, 2014**
  A Risk-Averse Multistage Stochastic Programming Model in Forestry
  20-minute presentation
- **SP XIII, Bergamo, Italy, 2013**
  Constraint removal in practice: a case study in portfolio selection theory
  20-minute presentation
- **21st ISMP, Berlin, Germany, 2012**
  The optimal harvesting problem under risk aversion
  20-minute presentation
- **SP XII, Halifax, Canada 2010.**
  Risk-return trade-off with the scenario approach
  20-minute presentation
- **The 7th Conference on Multivariate Distributions with Applications, Maresias, Brazil, 2010.**
  A joint hurdle-race problem
  20-minute presentation
- **EURO XXIV, Lisbon, Portugal, 2010**
  Stochastic project scheduling: a financial viewpoint for the gate setting problem
  20-minute presentation
- **20th ISMP, Chicago, United States, 2009**
  The joint hurdle-race problem
  20-minute presentation
- **24th IFIP, Buenos Aires, Argentina, 2009**
  Sample average approximation for chance constrained programming
  20-minute presentation
- **XIV CLAIO, Cartagena, Colombia, 2008**
  Computational study of a chance constrained portfolio selection problem
  20-minute presentation
- **Invited talk at Universidad Adolfo Ibáñez, August 2008.**
  A chance constrained portfolio problem. 1 hour talk.
- **XI Symposium of Operational Research and Logistics of the Brazilian Navy, Rio de Janeiro, August 2008**
  Introduction to Stochastic Programming
  8 hour short course (with H.J. Bortolossi)
- **Graduate Course in the Department of Mathematics, PUC-Rio, March 2008-June 2008:**
  Introduction to Stochastic Programming
  Joint Lecturer (with H.J. Bortolossi and C. Tomei)

- **Graduate students' colloquium, Department of Mathematics, PUC-Rio, March 2008**
  Chance-constrained programming and a portfolio selection problem
  1 hour talk

- **Georgia Tech DOS Seminar, January 2008:**
  Computational study of a portfolio Selection Problem
  1 hour talk

- **5th ICDSA, May 2007:**
  A geometric approach to hydrothermal scheduling with variable production coefficient
  30 minute presentation

- **FUNENSEG series of talks: December 2008**
  Stochastic programming and applications.
  1 hour talk.

- **Actuarial Institute of PUC-Rio, January 2007:**
  Introduction to stochastic programming
  Short course, 4 classes of 90 minutes

- **III Bi-Annual meeting of the Brazilian Mathematical Society, November 2006:**
  Introduction to choice under uncertainty
  Short course, 4 classes of 90 minutes

- **III Bi-Annual meeting of the Brazilian Mathematical Society, November 2006:**
  Discrete dynamics applied to economics
  Short course, 4 classes of 90 minutes

- **Graduate Course in the Department of Mathematics, PUC-Rio, March-June 2006:**
  Introduction to Stochastic Programming
  Joint Lecturer (with H.J. Bortolossi)

- **Graduate students' colloquium, Department of Physics, PUC-Rio 2006**
  Random linear systems
  1 hour talk

- **Seminars of the Industrial Engineering Department, PUC-Rio, 2006:**
  Option pricing by simulation, with Renato A. Costa
  1 hour talk

- **Students Colloquium at the Department of Mathematics, PUC-Rio, 2004:**
  How to win on tennis
  1 hour talk

- **Scientific Initiation Program from CNPq, PUC-Rio, 2002:**
  Interior Point Methods and the Hydrothermal Scheduling problem
  20 minute talk

Grants

- **Fondecyt 11130056**: Multistage stochastic optimization applied to finance and mining (2013-2016). Principal Investigator ($70k USD).
- **IROE - Initiative de Recherche Optimisation et Energie**: Centralized versus Decentralized Energy Management in a Stochastic Setting, France, 2015-2016. Project Director ($11k USD).
- **Fondecyt 1120244**: Models and Strategies for Multi-Stage Stochastic Programs with Risk Control (2012-2016). Associate researcher ($100k USD).
- **PGMO - Programme Gaspard Monge pour L'Optimisation et la recherche oprationnelle**: LASON: Latin America Stochastic Optimization Network, France, 2013-2014. Project Director ($11k USD).
- **PGMO - Programme Gaspard Monge pour L'Optimisation et la recherche oprationnelle**: LASON: Latin America Stochastic Optimization Network, France, 2012-2013. Project Director ($11k USD).
- **IROE - Initiative de Recherche Optimisation et Energie**: Centralized versus Decentralized Energy Management in a Stochastic Setting, France, 2014-2015. Project Director ($11k USD).
- **Project Anillo ACT-88**: Mathematical Modeling for Industrial and Management Science Applications: An Interdisciplinary Approach. (2011-2013) (Associate researcher) ($710k USD).
- **Programa Basal**: Centro de Modelamiento Matemático (CMM). University of Chile. 2009-2016. External Associate ($7000k USD)

Awards and Honors

- Fellowship at the Ph.D. program at the Department of Mathematics of PUC-Rio provided by FUNENSEG (private actuarial institution), 2005-2009.
- Fellowship from a Brazilian Governmental Agency (CAPES) to spend 1 year as an exchange Ph.D. student at the ISYE Department at Georgia Tech, including health and travel expenses, 2007.

Service

- I have been a reviewer for the following journals: Mathematical Programming, European Journal of Operational Research (EJOR), Journal of Mathematical Analysis and Applications (JMAA), Journal of Optimization Theory and Applications (JOTA), Computational Optimization and Application (COAP), Canadian Journal of Forestry Research (CJFR), INFORMS Journal on Computing (IJOC), OR Spectrum.
- Co-organizer, with T. Homem-de-Mello, of the Simulation Optimization workshop, held at Viña del Mar, Chile, 2013.
- Organizer of the Students' Colloquium from 2003-2006 at PUC-Rio.
- Co-organizer (with L.J. Díaz) of the 2004 Oktobermat, a series of lectures at the Department of Mathematics.

Skills

Languages : Native language: Portuguese.

- English (fluent).
- Spanish (understands well, reads well, writes well, speaks well).
- French (understands well, reads well, writes fairly well, speaks fairly well).

Software and languages: Maple (advanced), MatLab (advanced), LaTeX(advanced), GAMS (advanced), AMPL (intermediate), Java (beginner), R (beginner) and Windows.

References

- Professor Carlos Tomei, Department of Mathematics at PUC-Rio, Brazil.
  e-mail: carlos@mat.puc-rio.br
- Professor Shabbir Ahmed, H. Milton Stewart School of Industrial and Systems Engineering at Georgia Tech, U.S.
  e-mail: sahmed@isye.gatech.edu
- Professor Alexander Shapiro, H. Milton Stewart School of Industrial and Systems Engineering at Georgia Tech, U.S.
  e-mail: ashapiro@isye.gatech.edu