

# SANTIAGO R. BALSEIRO

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## Address

Graduate School of Business  
Columbia University  
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## RESEARCH INTERESTS

Pricing & Revenue Management, Digital Markets, Online Advertising, Stochastic Modeling, Dynamic Games, Mechanism Design, Approximation Algorithms, Data-driven Optimization

## EDUCATION

- 2008 - 2013      **Columbia University**, New York, NY  
Ph.D. in **Decision, Risk, and Operations**, Graduate School of Business  
Advisors: Prof. Omar Besbes and Prof. Gabriel Y. Weintraub  
Dissertation: “Competition and Yield Optimization in Ad Exchanges”
- 2001 - 2007      **Universidad de Buenos Aires**, Argentina  
Bachelor and Master degrees in **Industrial Engineering**

## ACADEMIC APPOINTMENTS

- 07/2017 - Present      **Graduate School of Business**, Columbia University, New York, NY  
**Assistant Professor** - Decision, Risk, and Operations
- 07/2013 - 6/2017      **Fuqua School of Business**, Duke University, Durham, NC  
**Assistant Professor** - Decision Sciences

## JOURNAL PAPERS

- *Approximations to Stochastic Dynamic Programs via Information Relaxation Duality*, with D.B. Brown. Operations Research (forthcoming).
- *Static Routing in Stochastic Scheduling: Performance Guarantees and Asymptotic Optimality*, with D.B. Brown and C. Chen. Operations Research (forthcoming).
- *Dynamic Mechanisms with Martingale Utilities*, with V. Mirrokni and R. Paes Leme. Management Science (forthcoming).
- *Optimal Contracts for Intermediaries in Online Advertising*, with O. Candogan. Operations Research. July–August 2017.
- *Bounds on the Welfare Loss of Moral Hazard with Limited Liability*, with F. Balmaceda, J.R. Correa, and N.E. Stier-Moses. Games & Economic Behavior. January 2016.
- *Repeated Auctions with Budgets in Ad Exchanges: Approximations and Design*, with O. Besbes and G. Weintraub. Management Science. January 2015.
- *Yield Optimization of Display Advertising with Ad Exchange*, with J. Feldman, V. Mirrokni, and S. Muthukrishnan. Management Science. December 2014.

- *An Ant Colony Algorithm hybridized with insertion heuristics for the Time Dependent Vehicle Routing Problem with Time Windows*, with I. Loiseau and J. Ramonet. *Computers & Operations Research*. 2011.

## WORKING PAPERS AND ONGOING WORK

- *Advertiser Learning in an Internet Ad Network*, with C.F. Mela and J.M.T. Roos. In preparation.
- *Learning in Repeated Auctions with Budgets: Regret Minimization and Equilibrium*, with Y. Gur. Under review.
- *Multi-Agent Mechanism Design without Money*, with H. Gurkan and P. Sun. Under review.
- *Budget Management Strategies in Repeated Auctions*, with A. Kim, M. Mahdian, and V. Mirrokni. Working paper.
- *Dynamic Mechanism Design with Budget Constrained Buyers under Limited Commitment*, with O. Besbes and G. Weintraub. Under review.
- *Multi-stage Intermediation in Online Advertising*, with O. Candogan and H. Gurkan. Under review.

## REFEREED CONFERENCE PROCEEDINGS

- *Dynamic Revenue Sharing*, with M. Lin, V. Mirrokni, R. Paes Leme and Song Zuo. 31st Annual Conference on Neural Information Processing Systems (NIPS), 2017.
- *Learning in Repeated Auctions with Budgets: Regret Minimization and Equilibrium*, with Y. Gur. 18th ACM Conference on Economics and Computation, 2017.
- *Budget Management Strategies in Repeated Auctions*, with A. Kim, M. Mahdian, and V. Mirrokni. 26th International World Wide Web Conference, 2017.
- *Dynamic Mechanisms with Martingale Utilities*, with V. Mirrokni and R. Paes Leme. 18th ACM Conference on Economics and Computation, 2017.
- *Dynamic Mechanism Design with Budget Constrained Buyers under Limited Commitment*, with O. Besbes and G. Weintraub. Conference Version: 17th ACM Conference on Economics and Computation, 2016.
- *Repeated Auctions with Budgets in Ad Exchanges: Approximations and Design*, with O. Besbes and G. Weintraub. 14th ACM Conference on Economics and Computation, 2013.
- *Yield Optimization of Display Advertising with Ad Exchange*, with J. Feldman, V. Mirrokni, and S. Muthukrishnan. Conference Version: 12th ACM Conference on Economics and Computation, 2011.
- *Bounds on the Welfare Loss of Moral Hazard with Limited Liability*, with F. Balmaceda, J.R. Correa, and N.E. Stier-Moses. Workshop on Internet & Network Economics, 2010.

## GRANTS AND AWARDS

- Google Faculty Research Award, Summer 2015
- George B. Dantzig Dissertation Award, First Place, 2014
- George Nicholson Student Paper Competition, Honorable Mention, 2014
- Summer Grant; Networks, Electronic Commerce, and Telecommunications (NET) Institute; 2012
- Deming Doctoral Fellowship, Columbia University, 2011
- Google Engineering Intern Scholarship, 2010

- Full Tuition and Fellowship, Graduate School of Business, Columbia University, 2008-2013

## INVITED TALKS AND CONFERENCE PRESENTATIONS

- *Budget Management Strategies in Repeated Auctions*
  - INFORMS Annual Meeting, Houston, TX, October 2017
- *Learning in Repeated Auctions with Budgets: Regret Minimization and Equilibrium*
  - 18th ACM Conference on Economics and Computation, Cambridge, MA, June 2017
  - 3rd Workshop in Operations, Networks & Data Analytics, Universidad Torcuato Di Tella, Buenos Aires, Argentina, December 2017
- *Dynamic Mechanisms with Martingale Utilities (formerly titled “Bundling Over Time and Martingale Auctions”)*
  - Google’s Market Algorithms Workshop, New York, NY, January 2016
  - 11th Utah Winter Operations Conference, Snowbird, UT, February 2016
  - Marketplace Innovation Workshop, New York, NY, June 2016
  - INFORMS Annual Meeting, Nashville, TN, November 2016
  - 18th ACM Conference on Economics and Computation, Cambridge, MA, June 2017
  - University of North Carolina at Chapel Hill (2017), Columbia Business School (2017)
- *Multi-stage Intermediation in Display Advertising*
  - 15th Annual Revenue Management & Pricing Section Conference, New York, NY, June 2015
  - INFORMS Annual Meeting, Philadelphia, PA, November 2015
- *Dynamic Mechanism Design with Budget Constrained Buyers under Limited Commitment*
  - INFORMS Manufacturing & Service Operations Management Conference, Seattle, WA, June 2014
  - INFORMS Annual Meeting, San Francisco, CA, November 2014
  - INFORMS Applied Probability Society, Istanbul, Turkey, July 2015
  - INFORMS Annual Meeting, Philadelphia, PA, November 2015
  - Columbia Business School (2015), Google Research Seminar Series (2015)
  - 1st Workshop in Operations, Networks & Data Analytics, Universidad Torcuato Di Tella, Buenos Aires, Argentina, December 2015
  - 11th Utah Winter Operations Conference, Snowbird, UT, February 2016
- *Bidding under Budget Constraints in Online Advertising: Shading versus Throttling*
  - INFORMS Annual Meeting, Minneapolis, MN, October 2013
- *Repeated Auctions with Budgets in Ad Exchanges: Approximations and Design (formerly titled “Auctions for Online Display Advertising Exchanges: Approximations and Design”)*
  - INFORMS Annual Meeting, Phoenix, AZ, 2012
  - INFORMS Manufacturing & Service Operations Management Conference, New York, NY, 2012
  - 21st International Symposium on Mathematical Programming, Berlin, Germany, 2012
  - Tuck School of Business (2012), Kellogg School of Management (2012), Singapore Management University (2012), SUTD (2012), The Wharton School (2013), NYU Stern (2013), Fuqua School of Business (2013), Yale School of Management (2013), INSEAD (2013), Universitat Pompeu Fabra (2013), IESE (2013), UC Irvine (2013), Stanford Graduate School of Business (2013), UT Austin (2013), University of Rochester (2013), UT Dallas (2013), Cornell ORIE (2013), USC Marshall School of Business (2013)

- 45th ACM Symposium on the Theory of Computing (STOC), Stanford University, June 2013
- *Yield Optimization of Display Advertising with Ad Exchange*
  - 12th ACM Conference on Electronic Commerce, San Jose, CA, 2011
  - 11th Annual Revenue Management & Pricing Section Conference, New York, NY, 2011
  - INFORMS Annual Meeting, Charlotte, NC, 2011
- *Bounds on the Welfare Loss of Moral Hazard with Limited Liability (formerly titled “The Cost of Moral hazard and Limited Liability in the Principal-Agent Problem”)*
  - 6th Workshop on Internet & Network Economics, Stanford University, 2010
  - INFORMS Annual Meeting, Austin, TX, 2010
- *Revenue Management of Consumer Options for Sporting Events*
  - Google Seminar Series, New York, NY, 2011
  - ALIO-INFORMS Joint International Meeting, Buenos Aires, Argentina, June 2010
- *Integrated Planning Models for Capacity Planning and Call Routing in Call Center Networks with General SLAs*
  - INFORMS Annual Meeting, Austin, TX, 2010
- *An Ant Colony Algorithm hybridized with insertion heuristics for the Time Dependent Vehicle Routing Problem with Time Windows*
  - LVII Annual Meeting of the Argentine Mathematical Union, Cordoba, Argentina, 2007

## **OUTSIDE ACTIVITIES**

Columbia Business School requires faculty members to disclose any activities that might present a real or apparent conflict of interest. The list below complies with this requirement.

07/2016 - Present    **Google Research**, New York, NY  
 Research Advisor