

Alessandro Arlotto

Duke University
The Fuqua School of Business
100 Fuqua Drive, Office W311
PO Box 90120
Durham, NC, 27708-0120

<http://www.duke.edu/~aa249/>
alessandro.arlotto@duke.edu
Phone: (919) 660-7780
Fax: (919) 681-6246
Last updated: March 27, 2017

Research Interests

Applied probability, stochastic modeling, stochastic dynamic programming, combinatorial optimization, and applications to management sciences and economics.

Education

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA
Ph.D. in Managerial Science and Applied Economics, December 2012
Dissertation Title: “Essays in Problems of Optimal Sequential Decisions”
Advisors: Noah Gans, J. Michael Steele

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA
A.M. in Statistics, December 2009
Thesis: “Risk-Neutral Pricing with Switching Volatility”
Advisor: J. Michael Steele

UNIVERSITY OF TORINO, Torino, Italy
Laurea Specialistica (M.S.) *cum laude* in Finance, July 2007
Thesis: “Stochastic Orders and Multinormal Distributions”
Advisors: Marco Scarsini, Igor Prünster

UNIVERSITY OF TORINO, Torino, Italy
Laurea Triennale (B.S.) *cum laude* in Economics and Business, November 2004
Thesis: “Comparisons among Electoral Systems”
Advisor: Marco Scarsini

Professional Experience

- | | |
|----------------|---|
| 2016 – present | <i>Associate Professor of Business Administration, Mathematics, and Statistical Science</i>
Decision Sciences, The Fuqua School of Business, Duke University
Department of Mathematics (secondary), Duke University
Department of Statistical Science (secondary), Duke University |
| 2012 – 2016 | <i>Assistant Professor of Business Administration</i>
Decision Sciences, The Fuqua School of Business, Duke University |
| 2015 November | <i>Visiting Scholar</i>
Department of Economics and Finance, LUISS Guido Carli |
| 2015 January | <i>Visiting Scholar</i>
CMS–EMS, Kellogg School of Management, Northwestern University |

2012 June	<i>Visiting Scholar</i> Statistics Initiative, Collegio Carlo Alberto
2011 March	<i>Visiting Scholar</i> Technology & Operations Management, INSEAD
2010 September	<i>Visiting Scholar</i> Statistics Initiative, Collegio Carlo Alberto

Grants Funded

1. NATIONAL SCIENCE FOUNDATION, CAREER AWARD, “The effects of centralized and decentralized sequential decisions on system performance,” award no. 1553274, amount \$500,000, 5/01/2016–4/30/2021.
2. NATIONAL SCIENCE FOUNDATION, “Conference on Probability Theory and Combinatorial Optimization,” award no. 1502471, amount \$19,000, 2/01/2015–1/31/2016.

Submitted Papers

1. ARLOTTO, A., FRAZELLE, A. E., and WEI, Y. (2017) Strategic open routing in service networks, *under review*.
 - Finalist in the 2016 M&SOM Student Paper Competition (Entrant: A. E. Frazelle)

Refereed Publications

2. ARLOTTO, A., WEI, Y., and XIE, X. (2017) An adaptive $O(\log n)$ -optimal policy for the online selection of a monotone subsequence from a random sample, *Random Structures & Algorithms*, forthcoming.
3. ARLOTTO, A., and STEELE, J. M. (2017) A central limit theorem for costs in Bulinskaya’s inventory management problem when deliveries face delays, *Methodology and Computing in Applied Probability*, forthcoming.
4. ARLOTTO, A., and STEELE, J. M. (2016) A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming, *Mathematics of Operations Research*, **41**, 1448–1468.
5. ARLOTTO, A. and STEELE, J. M. (2016) Beardwood-Halton-Hammersley theorem for stationary ergodic sequences: a counterexample, *The Annals of Applied Probability*, **26**, 2141-2168.
6. ARLOTTO, A., MOSSEL, E., and STEELE, J. M. (2016) Quickest online selection of an increasing subsequence of specified size, *Random Structures & Algorithms*, **49**, 235–252.
7. ARLOTTO, A., NGUYEN, V. V., and STEELE, J. M. (2015) Optimal online selection of a monotone subsequence: a central limit theorem, *Stochastic Processes and their Applications*, **125**, 3596–3622.
8. ARLOTTO, A., GANS, N., and STEELE, J. M. (2014) Markov decision problems where means bound variances, *Operations Research*, **62**, 864–875.

9. ARLOTTO, A. and STEELE, J. M. (2014) Online selection of an alternating subsequence: a central limit theorem, *Advances in Applied Probability*, **46**, 536–559.
10. ARLOTTO, A., CHICK, S. E., and GANS, N. (2014) Optimal hiring and retention policies for heterogeneous workers who learn, *Management Science*, **60**, 110-129, former title: “Hiring and retention of heterogeneous workers.”
11. ARLOTTO, A., CHEN, R. W., SHEPP, L. A. and STEELE, J. M. (2011) Online selection of alternating subsequences from a random sample, *Journal of Applied Probability*, **48**, 1114-1132.
12. ARLOTTO, A. and STEELE, J. M. (2011) Optimal sequential selection of a unimodal subsequence of a random sequence, *Combinatorics, Probability and Computing*, **20**, 799-814.
13. ARLOTTO, A. and SCARSINI, M. (2009) Hessian orders and multinormal distributions, *Journal of Multivariate Analysis*, **100**, 2324-2330.

Conference Proceedings

14. ARLOTTO, A., CHICK, S.E., and GANS, N. (2010) Optimal employee retention when inferring unknown learning curves, *Proceedings of the 2010 Winter Simulation Conference (WSC)*, 1178 – 1188.

Invited Seminars

1. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Columbia University, Department of Industrial Engineering and Operations Research and Columbia Business School, November 2016
2. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Tsinghua University, Mostly OM Workshop, May 2016
3. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Canergie Mellon University, Tepper School of Business, April 2016
4. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Georgia Institute of Technology, School of Mathematics, January 2016
5. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Cornell University, School of Operations Research and Information Engineering, December 2015
6. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Università degli Studi di Roma Tor Vergata, Department of Mathematics, November 2015

7. *Markov decision problems where means bound variances*, invited talk at LUISS Guido Carli, Department of Economics and Finance, October 2015
8. *Markov decision problems where means bound variances*, invited talk at Duke University, The Fuqua School of Business, August 2015
9. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Duke University, The Fuqua School of Business, April 2015
10. *A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming*, invited talk at Collegio Carlo Alberto, February 2015
11. *Markov decision problems where means bound variances*, invited talk at Southern Methodist University, Cox School of Business, April 2014
12. *Markov decision problems where means bound variances*, invited talk at University of North Carolina at Chapel Hill, Department of Statistics and Operations Research, December 2013
13. *Optimal hiring and retention policies for heterogeneous workers who learn*, invited talk at Singapore University of Technology and Design, Engineering Systems and Design, November 2013
14. *Distributional results for Markov decision problems*, invited talk at National University of Singapore, Department of Statistics and Applied Probability, November 2013
15. *Markov decision problems where means bound variances*, invited talk at INSEAD, Decision Sciences, November 2013
16. *Distributional results for Markov decision problems*, invited talk at Duke University, Department of Mathematics, February 2013
17. *Online selection of an alternating subsequence: a central limit theorem*, invited talk at Università degli Studi di Torino, Department of Mathematics, December 2012
18. *Markov decision problems where means bound variances*, invited talk at Università degli Studi di Milano-Bicocca, June 2012
19. *Markov decision problems where means bound variances*, invited talk at University of Florida, Department of Industrial and Systems Engineering, March, 2012

20. *Optimal hiring and retention policies for heterogeneous workers who learn*, invited talk at Universitat Pompeu Fabra, Department of Economics and Business, February, 2012
21. *Optimal hiring and retention policies for heterogeneous workers who learn*, invited talk at Collegio Carlo Alberto, February, 2012
22. *Markov decision problems where means bound variances*, invited talk at Università Bocconi, Department of Decision Sciences, February, 2012
23. *Markov decision problems where means bound variances*, invited talk at Northwestern University, Kellogg School of Management, February, 2012
24. *Optimal hiring and retention policies for heterogeneous workers who learn*, invited talk at London Business School, Management Science and Operations, February, 2012
25. *Markov decision problems where means bound variances*, invited talk at Pennsylvania State University, Department of Industrial and Manufacturing Engineering, February, 2012
26. *Markov decision problems where means bound variances*, invited talk at University of Minnesota, Department of Industrial & Systems Engineering, January, 2012
27. *Markov decision problems where means bound variances*, invited talk at Duke University, The Fuqua School of Business, January, 2012
28. *Markov decision problems where means bound variances*, invited talk at Georgetown University, McDonough School of Business, January, 2012
29. *Markov decision problems where means bound variances*, invited talk at Columbia University, Columbia Business School, January, 2012
30. *Markov decision problems where means bound variances*, invited talk at New York University, Stern School of Business, January, 2012
31. *Markov decision problems where means bound variances*, invited talk at University of Chicago, Booth School of Business, January, 2012
32. *Optimal hiring and retention policies for heterogeneous workers who learn*, invited talk at Indiana University, Kelley School of Business, January, 2012
33. *Markov decision problems where means bound variances*, invited talk at Massachusetts Institute of Technology, Sloan School of Management, December, 2011

34. *Markov decision problems where means bound variances*, invited talk at University of Pennsylvania, The Wharton School, December, 2011
35. *Optimal hiring and retention policies for heterogeneous workers who learn*, invited talk at INSEAD, Technology & Operations Management, March, 2011
36. *Hessian orders and multinormal distributions*, invited talk at George Washington University, Department of Statistics, April, 2010

Conference Presentations

A central limit theorem for temporally non-homogenous Markov chains with applications to dynamic programming

2016 INFORMS Annual Meeting (Nashville, TN)

2015 INFORMS Annual Meeting (Philadelphia, PA)

2015 INFORMS Applied Probability Society Conference (Istanbul, Turkey)

2015 International Workshop on Sequential Methodologies (New York, NY)

A central limit theorem for costs in Bulinskaya's inventory management problem when deliveries face delays

2016 INFORMS International Conference (Waikoloa, HI)

Optimal online selection of a monotone subsequence: a central limit theorem

2015 INFORMS Applied Probability Society Conference (Istanbul, Turkey)

Markov decision problems where means bound variances

2014 Conference on Stochastic Processes and their Applications (Buenos Aires, Argentina)

2012 INFORMS Annual Meeting (Phoenix, AZ)

2012 IWAP - International Workshop in Applied Probability (Jerusalem, Israel)

2011 INFORMS Annual Meeting (Charlotte, NC)

Online selection of an alternating subsequence: a central limit theorem

2013 INFORMS Applied Probability Society Conference (San Jose, Costa Rica)

2013 Seminar on Stochastic Processes (Durham, NC)

Optimal hiring and retention policies for heterogeneous workers who learn

2014 INFORMS Annual Meeting (San Francisco, CA)

2011 INFORMS Annual Meeting (Charlotte, NC)

2011 MSOM Special Interest Group Meeting (Ann Arbor, MI)

2010 INFORMS Annual Meeting (Austin, TX)

2009 INFORMS Annual Meeting (San Diego, CA)

2009 INFORMS Applied Probability Society Conference (Ithaca, NY)

2009 MSOM Annual Conference (Cambridge, MA)

On the sequential selection of monotone, unimodal and alternating subsequences from a random sample

2011 INFORMS Applied Probability Society Conference (Stockholm, Sweden)

2010 INFORMS Annual Meeting (Austin, TX)

Hessian orders and multinormal distributions

2009 Fields–MITACS Summer School in Applied Probability (Ottawa, Canada)

2008 International Workshop on Matrices and Statistics (Tomar, Portugal)

Teaching Experience

- Spring 2017 Duke University, The Fuqua School of Business, Durham, NC
BA915/MATH742/STA715: Stochastic Models (Ph.D.)
- Fall 2016 Duke University, The Fuqua School of Business, Durham, NC
DEC610: Probability and Statistics (Daytime MBA, 3 sections)
- Fall 2015 Duke University, The Fuqua School of Business, Durham, NC
DEC610: Probability and Statistics (Daytime MBA, 3 sections)
- January 2015 Northwestern University, Kellogg School of Management, Evanston, IL
Mini-course on Bandit Models (Ph.D.)
- Fall 2014 Duke University, The Fuqua School of Business, Durham, NC
DEC610: Probability and Statistics (Daytime MBA, 3 sections)
BA998: Special Topics in Decision Sciences (Ph.D.)
- Summer 2014 Duke University, The Fuqua School of Business, Durham, NC
DEC516F/516K: Quantitative Business Analysis (MMS, 2 sections)
- Fall 2013 Duke University, The Fuqua School of Business, Durham, NC
DEC610: Probability and Statistics (Daytime MBA, 3 sections)
- Fall 2012 Duke University, The Fuqua School of Business, Durham, NC
DEC610W: Probability and Statistics (Weekend MBA, 2 sections)
- Summer 2011 University of Pennsylvania, The Wharton School, Philadelphia, PA
Wharton Summer Math Camp (Ph.D. course)
- Summer 2010 University of Pennsylvania, The Wharton School, Philadelphia, PA
Wharton Summer Math Camp (Ph.D. course)
- Summer 2009 University of Pennsylvania, The Wharton School, Philadelphia, PA
Wharton Summer Math Camp (Ph.D. course)
- Spring 2009 University of Pennsylvania, The Wharton School, Philadelphia, PA
OPIM415: Product Design (Teaching Assistant)
- Fall 2008 University of Pennsylvania, The Wharton School, Philadelphia, PA
OPIM690: Managerial Decision Making (Teaching Assistant)
- 2003 – 2006 University of Torino, Torino, Italy
Calculus for Business and Economics (Teaching Assistant)

Academic Service

Organizer of the *Decision Sciences Seminar Series*, The Fuqua School of Business, Duke University, 2012–present

Member of the *Program Committee*, 2017 INFORMS Applied Probability Society Conference, Evanston, IL

Organizer of the *2017 Southeastern Probability Conference*, Duke University

Organizer and Chair for the *invited session* “Probabilistic Combinatorial Optimization,” 2016 INFORMS Annual Meeting, Nashville, TN

Faculty sponsor for *Data+: Smart(er) Routing at Theme Parks*, undergraduate research experience, Information Initiative at Duke University, 2016

Member of the *Faculty Advisory Committee*, The Fuqua School of Business, Duke University, 2013–2016

Organizer for the *invited session* “New Directions in Applied Probability,” 2015 INFORMS Applied Probability Society Conference, Istanbul, Turkey

Member of the *Program Committee*, 2015 INFORMS Applied Probability Society Conference, Istanbul, Turkey

Organizer of the *Duke Conference on Probability Theory and Combinatorial Optimization*, The Fuqua School of Business, Duke University, 2015

Organizer for the *Fuqua Summer Seminar Series*, 2014–2015

Organizer and Chair for the *invited session* “Probability Theory and Combinatorial Optimization,” 2014 INFORMS Annual Meeting, San Francisco, CA

Member of the *Decision Sciences Ph.D. Program Progress Committee*, 2012–2014

Member of the *Decision Sciences Ph.D. Admission Committee*, 2012–2014

Organizer for the *invited session* “Markov Chains and Markov Decision Problems,” 2013 INFORMS Applied Probability Society Conference, San José, Costa Rica

Member of the *Program Committee*, 2013 INFORMS Applied Probability Society Conference, San José, Costa Rica

Honors and Awards

National Science Foundation, Faculty Early Career Development (CAREER) Award, 2016–2021

Award for Innovation and Excellence in Teaching, Master in Management Studies, Duke-

Kunshan University, 2015

Wharton Doctoral Fellowship in Decision Sciences, 2010–2011

Wharton Doctoral Fellowship, 2007–2010, 2011–2012

Wharton Ph.D. Student Travel Grant, 2008, 2011

Fields Institute Travel Grant, 2009

“Patty and Jay H. Baker” Endowed Ph.D. Fellowship, 2009

Professional Activities

Reviewer for *Advances in Applied Probability*, *Decision Analysis*, *European Journal of Operations Research*, *Journal of Applied Probability*, *Management Science*, *Manufacturing & Service Operations Management*, *Methodology and Computing in Applied Probability*, *MSOM Sig Conference*, *Mathematical Reviews (AMS)*, *Mathematics of Operations Research*, *National Science Foundation*, *Omega*, *Operations Research*, *Operations Research Letters*, *Production and Operations Management*, *Theory and Decision*

Panelist for *National Science Foundation*

Member of Institute of Operations Research and Management Science (INFORMS), Institute of Mathematical Statistics (IMS)

Summer Schools

Cornell Probability Summer School, Cornell University, Ithaca, NY, 2009

Fields–MITACS Summer School in Applied Probability, Carleton University, Ottawa, Canada, 2009

SMI – Summer School in Mathematics, Perugia, Italy, 2006, 2007

Languages

Italian (native), English (fluent)

Computer Skills and Interests

Matlab, Mathematica, R, Visual Basic, Html, Sql, L^AT_EX

References

Available upon request

Immigration

Italian Citizen; U.S. Permanent Resident