Justin A. Sirignano

Department of Management Science and Engineering, Stanford University
jasirign@stanford.edu, 949-370-5510
http://www.stanford.edu/~jasirign/

EDUCATION

Stanford University 2010-2015
PhD candidate in Management Science and Engineering: Finance Group
Dissertation Advisor: Professor Kay Giesecke
Dissertation Title: Asymptotics for Large Stochastic Systems
GPA: 4.0/4.0

Princeton University, B.S.E. 2006-2010
Major: Operations Research and Financial Engineering
Certificate: Applied and Computational Mathematics
GPA: 3.9/4.0 and graduated *summa cum laude*
Elected to Phi Beta Kappa, Tau Beta Pi, and Sigma Xi

PUBLICATIONS

- "Large Portfolio Asymptotics for Loss from Default" (with K. Giesecke, K. Spiliopoulos, and R.B. Sowers). *Mathematical Finance*, in press, 2013.
- "Fluctuation Analysis for the Loss from Default" (with K. Giesecke and K. Spiliopoulos). *Stochastic Processes and their Applications*, (124): 2322-2362, 2014.
- "A Forward-Backward Algorithm for Stochastic Control Problems" (with S. Ludwig, R. Huang, and G. Papanicolaou). *Proceedings of the First International Conference on Operations Research and Enterprise Systems.* Vilamoura, Algarve, Portugal. $4-6$ February, 2012.
- "Optimization of Secondary-Air Addition in a Continuous One-Dimensional Spray Combustor" (with L. Rodriquez, A. Sideris, and W. Sirignano). *Journal of Propulsion and Power*, 26.2: 288-294, 2010.

WORKING PAPERS

- "Efficient Risk Analysis for Mortgage Pools" (with K. Giesecke). Submitted to *Operations Research.* **Winner of 2014 SIAM Financial Mathematics and Engineering Conference Paper Prize**.
- "Likelihood Estimation for Large Financial Systems" (with K. Giesecke and G. Schwenkler). To be submitted soon to *Annals of Statistics*.
- "Optimal Selection of Loan Portfolios" (with K. Giesecke and G. Tsoukalas). Work in progress.
- "Geographic Risk for Mortgages" (with K. Giesecke). Work in progress.
- "Risk Premia for Mortgage-backed Securities" (with K. Giesecke and M. Ohlrogge). Work in progress.

HONORS

- NSF Grant ($220,000), Division of Social and Economic Sciences: Methodology, Measurement, and Statistics Program.
- SIAM Financial Mathematics and Engineering Conference Paper Prize.
- Lore von Jaskowsky Memorial Prize, School of Engineering and Applied Sciences at Princeton University, for senior thesis research.

- Rose Hills Foundation Engineering Fellowship, Stanford University.
- Travel Award for INFORMS Conference (2013), Stanford University.
- Travel Award for SIAM Financial Math Conference (2012, 2014), SIAM.

PRESENTATIONS

- SIAM Financial Mathematics and Engineering Meeting, Chicago, 2014. Invited Speaker.
- INFORMS Annual Meeting, San Francisco, 2014. Invited Speaker.
- Joint Mathematics Meeting, Baltimore, 2014. Invited Speaker.
- INFORMS Annual Meeting, Minneapolis, 2013.
- Fifth Western Conference on Mathematical Finance, Stanford University, 2013. Invited Speaker.
- INFORMS Annual Meeting, Phoenix, October, 2012. Invited Speaker.
- Financial Mathematics Seminar, Stanford University, 2012. Invited Speaker.
- Systemic Risk Seminar, Department of Mathematics, Stanford University, 2012.
- SIAM Financial Mathematics and Engineering Meeting, Minneapolis, 2012.
- Annual Meeting of the Canadian Applied and Industrial Mathematics Society, Toronto, 2012. Invited Speaker.
- 5th Financial Risks International Forum, Paris, France, 2012.
- Financial Engineering Seminar, Stanford University, 2011.

PROFESSIONAL ACTIVITIES

- Chair of the *Credit Risk* session for SIAM Annual Meeting, Minneapolis, 2012.
- Session Organizer and Chair of *Financial Risks* session for INFORMS Annual Meeting, 2014.
- Referee for *Journal of Banking and Finance*

TEACHING EXPERIENCE

- Undergraduate courses:
  - Teaching assistant: Introduction to Financial Analysis (MS&E 142)
  - Teaching assistant: Introduction to Optimization (MS&E 111)
- Graduate courses:
  - Teaching assistant: Honors Investment Science (MS&E 242H), 2013
  - Teaching assistant: Investment Science (MS&E 245), 2014
  - Teaching assistant: Mathematical Finance (MATH 238)
  - Teaching assistant: Credit Risk (MS&E 347), 2012, 2013, and 2014

WORK EXPERIENCE

- British Petroleum, Natural Gas and Power (NAGP) Trading, Summer 2013. Proposed, developed, and successfully backtested a trading algorithm for power market using machine learning.

SKILLS

Matlab, Python, LaTeX, Excel, Hadoop (familiar), C++ (familiar), Java (familiar), R (familiar)

CITIZENSHIP

United States of America