# Lan Jiang

*1141 Laurie Ln, Burr Ridge, IL, 60527, US* (312)203-3615 *ljiang14@hawk.iit.edu*

**EDUCATION**

**Illinois Institute of Technology**, Chicago, IL

Ph.D. Candidate in Applied Mathematics, expected 12/2015.

**Course Highlight**: Statistical Learning(supervised and unsupervised learning; R), Applied Analysis, Computational Math(Matlab), Advanced Scientific Computing(C++), Stochastic Analysis.

**Research Interests:** Applied statistics, Monte-Carlo simulation and algorithms.

**Publications**:

- F. J. Hickernell, L. Jiang, Y. Liu, and A. B. Owen, Guaranteed Conservative Fixed Width Confidence Intervals via Monte Carlo Sampling, Monte Carlo and Quasi-Monte Carlo Methods 2012, Springer-Verlag, Berlin, 2014.
- S. C. T. Choi, Y. Ding, F. J. Hickernell, L. Jiang, L. A. Jimenez Rugama, X. Tong, Y. Zhang, and X. Zhou. *GAIL: Guaranteed Automatic Integration Library (Version 1.0 - 2.1)*, MATLAB Software.
- L. Jiang and F. J. Hickernell, *Guaranteed Monte Carlo Methods for Bernoulli Random Variables.* Submitted.

**Research Software:** *Guaranteed Automatic Integration Library(GAIL) for* MATLAB, https://code.google.com/p/gail/ (Key developer of four algorithms: *meanMCabs_g, meanMC_g, meanMCBer_g* and *cubMC_g*)

**Seminar Talk & Presentations:**

- Guaranteed Monte Carlo methods for Bernoulli Random Variables (Poster), Approximation, Integration, and Optimization Workshop, ICERM at Brown University, Providence, RI, 9/29/2014-10/3/2014.
- Guaranteed Automatic Integration Library for Monte Carlo simulation, SIAM annual meeting, Chicago, IL, 7/11/2014.
- A Guaranteed Automatic Integration Library, Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC2014), KU-Leuven, Belgium, 4/11/2014.
- Classification of Spam Email by Decision Tree, Illinois Institute of Technology, 5/1/2013.
- Using RBF-QR and Direct Method with Random Test functions, Illinois Institute of Technology, 12/05/2012.
- Numerical Approximation for a White Noise Driven SPDE with Locally Bounded Drift, Illinois Institute of Technology, 4/22/2012.

**Awards:**

- Dean's scholarship 09/2010 - 05/2013
- F. R. "Buck" McMorris summer research stipend winner 04/2011
- NSF travel support to attend MCQMC2014 in Belgium 04/2014

**Illinois Institute of Technology**, Chicago, IL

Stuart School of Business, Master of Mathematical Finance, 05/2010

**Course Highlight**: Fixed-Income Modeling, C++, Monte Carlo Method, Financial Statement Analysis, Computational Finance, Numerical PDE.

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**Academic Projects:**

- Prepared academic project of CEV model, Heston model, SABR model and analyzed vega hedging.
- Accomplished the research project using Hull-White short rate model to calibrate the paths to the Zero Coupon Bond price and used Monte Carlo method to simulate the mortgage price.
- Coded Copula Model, Finance Difference Scheme, Optimization problems using Python and C.
- Used Crank-Nicolson and Lax-Wendroff Scheme to analysis the stability of numerical algorithms.

**Beijing Normal University**, Beijing, China
Bachelor of Applied Mathematics, 07/2008

**EXPERIENCE**

**Illinois Institute of Technology** Chicago, IL
Developer of Guaranteed Automatic Integration Library(GAIL) 05/2013-Present

- Implemented tested and documented three algorithms: *meanMC_g, meanMCBer_g and cubMC_g* in Matlab based on published papers, performed doctest, unit test and stress test on three algorithms to eliminated bugs.
- Created installation, uninstallation and reinstallation scripts for GAIL of version 1.0 and 1.3. Coded Nagel-Schreckenberg traffic model, Genz and Keister test function as part of GAIL to evaluate characteristics of optimization algorithms.
- Analyzed compared and tested different regression models: linear, ridge, lasso and best subset selection to convert time budget to sample budget for *meanMC_g*.

**IronBridge Capital Management, L.P.** Oakbrook Terrace, IL
Research Intern 08/2013-12/2013

- Conducted backtest for the fundamental data performance during the past five years. Created backtest templates based on time series analysis displaying hit rates for different portfolios formulated on the basis of the company's intelligent fundamental data; Used SQL to verify and analyze data.
- Created regression and time series models to forecast the portfolios' performance in the next time period, performed F-test on the regression models based on least square to identify the model that best fit the population.
- Diagnosed & problem solved as it relates to the research project; Provided computational research support; Drafted and presented the back test reports to decision maker.

**SKILLS**

R, Python, SQL, Matlab, Excel, LaTex, Mathematica, PETSc.