# Chang-Han Rhee


CONTACT

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RESEARCH INTEREST

Lévy Processes, Applied Probability, Stochastic Simulation, Particle Filters, Experimental Design.

EDUCATION

**Centrum Wiskunde & Informatica**, Amsterdam, Netherlands 2015–Present
*Postdoctoral Fellow in Stochastics*
Supervisor: Bert Zwart

**Georgia Institute of Technology**, Atlanta, GA, USA 2013–2015
*Postdoctoral Fellow in Industrial & Systems Engineering and Biomedical Engineering*
Supervisor: Enlu Zhou, Peng Qiu

**Stanford University**, Stanford, CA, USA 2008–2013
*Ph.D. in Computational and Mathematical Engineering*
Advisor: Peter W. Glynn
Thesis title: *Unbiased Estimation with Biased Samplers*

**Stanford University**, Stanford, CA, USA 2006–2008
*M.S. in Computational and Mathematical Engineering* (Officially awarded in 2013)

**Seoul National University**, Seoul, Korea 1998–2006
*B.S. in Mathematics and Computer Science* (Alternative military service: 2002–2005)

PUBLICATIONS

"Sample path large deviation for heavy-tailed Lévy processes" with B. Zwart. Submitted for publication.

"Unbiased estimation with square root convergence for SDE models," with P. W. Glynn. *Operations Research*, 63(5): 1026–1043 . **2013 George Nicholson Student Paper Competition Finalist.**

"Exact estimation for Markov chain equilibrium expectations," with P. W. Glynn. *Journal of Applied Probability*, 51A(Special Jubilee Issue): 377-389, 2014.

"A new approach to unbiased estimation for SDEs," with P. W. Glynn, *Proceedings of the 2012 Winter Simulation Conference*, 2012. **Best MS/OR focused Student Paper.**

"An iterative algorithm for sampling from manifolds," with E. Zhou and P. Qiu, *Proceedings of the 2014 Winter Simulation Conference*, 2014.

"Lyapunov conditions for differentiability of Markov chain expectations: the absolutely continuous case," with P. W. Glynn. In preparation.

"Lyapunov conditions for differentiability of Markov chain expectations: the contracting case," with P. W. Glynn. In preparation.

"Response-surface-filling design," with E. Zhou and P. Qiu. In preparation.

"Importance sampling of heavy-tailed stocahstic perpetuities" with B. Chen and B. Zwart. In

preparation.

## Awards

- Finalist, George Nicholson Student Paper Competition, 2013
- Best Student Paper Award (MS/OR focused), Winter Simulation Conference, 2012
- Samsung Fellowship, 2008–2012
- Seoul National University Merit Scholarship, 2005–2006
- ACM SIGSIM Travel Award, 2012
- NSF Financial Support for WSC 2012

## Talks

*Large Deviation Principle for Heavy-tailed Lévy Processes*

- INFORMS Annual Meeting 2016, Nashville, November 2016 (Scheduled)

*Perfect estimation with imperfect samplers*

- ICME Colloquium, Stanford, February 2013
- INFORMS Annual Meeting 2013, Minneapolis, October 2013
- ISysE department, Korean Advanced Institute of Sceince and Technology, December 2013
- ISE department, Virginia Tech, March 2014
- Applied Probability Seminar, Georgia Tech, September 2014
- IE department, Seoul National University, December 2014
- IME department, Pohang University of Science and Technology, December 2014
- SME department, Sungkyunkwan University, December 2014
- OR Department, Naval Postgraduate School, August 2015
- Scientific Meeting, Centrum Wiskunde & Informatica, November 2015
- IMS-ISBA Joint Meeting MCMSki 2016, Lenzerheide, January 2016
- Applied Mathematics Department, Ecole Polytechnique, Paris, June 2016
- Retrospective Monte Carlo Workshop, The University of Warwick, July 2016

*Unbiased estimation with square root convergence for SDE models*

- INFORMS Annual Meeting 2013, Minneapolis, October 2013

*A new approach to unbiased estimation for SDEs*

- 2012 Winter Simulation Conference, Berlin, December 2012

*Sensitivity analysis for Markov chains*

- SIAM Seminars on Current Research in Engineering & Applied Mathematics, Stanford, March 2012
- INFORMS Annual Meeting 2014, San Francisco, November 2014
- Queueing Colloquium, Centrum Wiskunde & Informatica, May 2016

*An iterative algorithm for sampling from manifolds*

- 2014 Winter Simulation Conference, Savannah, December 2014

*Unbiased MLMC for Rare Event Simulation of Stochastic Recursions*

- MCQMC 2016, Stanford University, August 2016

*Perfect estimation and response-surface-filling design*

- ISE department, University of Illinois at Urbana-Champaign, February 2015
- IME department, Pohang University of Science and Technology, February 2015

## Teaching Experience

**Stanford University**, Stanford, CA, USA

*Instructor* Summer 2011

Taught math refresher course for the incoming students at Stanford Engineering School.
Duties: Developing course contents and giving lectures.

- CME 001: Math Refresher Course, Probability and Statistics Session

*Teaching Assistant* Autumn 2012, Spring 2012

Duties: Holding office hours, writing problem sets, final exams and their solutions, grading, and giving supplementary lectures and review sessions

- CME 100: Vector Calculus
- MS&E 322: Stochastic Calculus and Control

*Course Assistant* Winter 2007

Duties: Holding office hours, helping writing exams, and grading.

- MS&E 121: Introduction to Stochastic Modeling

## Professional Experience

**Gamevil Inc.**, Seoul, Korea 2003–2005

*Software Engineer (Alternative military service)*

- Worked on: Developing software libraries for mobile games. Developing mobile games. Administering online game server and user database.

**Wisefree Inc.**, Seoul, Korea 2002–2003

*Software Engineer (Alternative military service)*

- Worked on: Developing knowledge portals for LG Siltron and Korean national police.