Chang-Han Rhee

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Amsterdam, 1098 XG, Netherlands

RESEARCH INTEREST

Applied Probability, Simulation and Statistical Inference for Stochastic Processes, Energy Systems, Experimental Design.

EDUCATION

Centrum Wiskunde & Informatica, Amsterdam, Netherlands   2015–Present
Postdoctoral Researcher 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
Supervisor: 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 deviations for heavy-tailed Lévy processes and random walks," with J. Blanchet and B. Zwart. Submitted for publication. arXiv:1606.02795.

"A general importance Sampling strategy for heavy-tailed random walks," with B. Chen, J. Blanchet, and B. Zwart. Submitted for publication. arXiv:1706.03981.

"Importance sampling of heavy-tailed stocahstic perpetuities" with B. Chen and B. Zwart. Submitted for publication. arXiv:1609.03182.

"Lyapunov conditions for differentiability of Markov chain expectations: the absolutely continuous case," with P. W. Glynn. arXiv:1707.03870.

"Unbiased estimation with square root convergence for SDE models," with P. W. Glynn. *Operations Research*, 63(5): 1026–1043, 2015. **2016 INFORMS Simulation Society Outstanding Simulation Publication Award.** The preprint of this paper was also recognized as a **Finalist in 2013 George Nicholson Student Paper Competition.**

"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.

WORKING PAPERS   "Response-surface-filling design," with E. Zhou and P. Qiu.

"Sample-path large deviations for heavy-tailed Lévy processes: the Weibull case," with M. Bazhba and B. Zwart.

"Ordinal optimization for heavy-tailed systems" with B. Chen.

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

AWARDS
- INFORMS Simulation Society Outstanding Simulation Publication Award, 2016
- 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

SERVICES
Program Committee:
- 2016 Winter Simulation Conference (Analysis and Methodology Track)

Referee:
- Operations Research, Mathematics of Operations Research, Bernoulli, Advances in Applied Probability, IIE Transactions, Journal of Simulation, Proceedings of the Winter Simulation Conference, Proceedings of the 2016 MCQMC

TALKS
Sample path LDP for heavy-tailed processes: the principle of multiple big jumps
- Lévy 2016 Summer School, July 2016
- IBM Watson, September 2016
- INFORMS Annual Meeting, Nashville, November 2016
- Extreme Value Analysis Conference, Delft, June 2017
- Applied Probability Society Conference, Evanston, July 2017

Perfect estimation with imperfect samplers
- Winter Simulation Conference, Berlin, December 2012
- ICME Colloquium, Stanford University, February 2013
- INFORMS Annual Meeting, 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, University of Warwick, July 2016
- Computational Statistics Seminar, Oxford University, November 2016
- Operations Research Seminar, Tinbergen Institute, December 2016
- ORIE department, Cornell University, April 2017

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

An iterative algorithm for sampling from manifolds
- 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
- IME department, Pohang University of Science and Technology, February 2015
- ISE department, University of Illinois at Urbana-Champaign, February 2015
- ISysE department, Korean Advanced Institute of Sceince and Technology, March 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.