Minjae Park

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INTEREST

Probability and its applications in mathematical physics and combinatorics

EMPLOYMENT

L. E. Dickson Instructor, University of Chicago   2022-2025
Research specialist, Massachusetts Institute of Technology   2022

EDUCATION

Massachusetts Institute of Technology, United States   2016-2022
Ph.D., Mathematics, Advisor: Scott Sheffield   defended in May 2022
Thesis: Random surface interpretations of 2D Liouville quantum gravity and Yang-Mills theory

Korea Advanced Institute of Science and Technology, Republic of Korea   2011-2016
B.S., Mathematical Sciences
Temporarily left school for 21 months due to mandatory military service (Oct 2011-Jul 2013)

Korea Science Academy, Busan, Republic of Korea   2008-2010

RESEARCH

Random surfaces and lattice Yang-Mills, *Sky Cao, Minjae Park, Scott Sheffield*, arXiv, 2023.

On the geometry of uniform meandric systems, *Jacopo Borga, Ewain Gwynne, Minjae Park*, Comm. Math. Phys., 2023.

Wilson loop expectations as sums over surfaces on the plane, *Minjae Park, Joshua Pfeffer, Scott Sheffield, Pu Yu*, arXiv, 2023.

Brownian loops on non-smooth surfaces and the Polyakov-Alvarez formula, *Minjae Park, Joshua Pfeffer, Scott Sheffield*, to appear in J. Funct. Anal., 2023.

Loewner evolution driven by complex Brownian motion (with simulations by Minjae Park), *Ewain Gwynne, Joshua Pfeffer*, Ann. Probab., 2023.

Brownian loops and the central charge of a Liouville random surface, *Morris Ang, Minjae Park, Joshua Pfeffer, Scott Sheffield*, Ann. Probab., 2022.

Large deviations of radial SLE_∞, *Morris Ang, Minjae Park, Yilin Wang*, Electron. J. Probab., 2020

Almost Globally Stable Property of Kuramoto Model on Random Graphs, *Minjae Park*, Advisor: Prof. Sang-il Oum, KAIST Undergraduate Research Program (B.S. Thesis), 2015.

Adaptive Switching Median Filter for Impulse Noise Removal Based on Support Vector Machines,

Daegeun Lee, Minjae Park, et al., Communications of the Korean Statistical Society, 2011 18(6), 871-886.

Wavelet Based Non-Local Means Filtering for Speckle Noise Reduction of SAR Images, *Daegeun Lee, Minjae Park, et al.*, The Korean Journal of Applied Statistics, 2010 23(3), 595-607.

HONORS

Ph.D. Study-Abroad Scholarship, Korea Foundation for Advanced Studies	2016-2021
Korea Presidential Science Scholarship, Korea Student Aid Foundation	2011-2016
KAIST Presidential Fellowship	2011-2016
Samsung Humantech Research Paper Award, *Bronze Prize*	2010

INVITED TALKS

Two-Dimensional Random Geometry at IMSI in Chicago	Jul 2024
Workshop on Probabilistic Field Theories in Helsinki	Jun 2024
Northwestern Probability Seminar	04/02/2024
KPZ meets KPZ workshop at the Fields institute	03/07/2024
Cornell Probability Seminar	02/19/2024
Yonsei Discrete Analysis Seminar	01/25/2024
Probability Workshop in Korea	01/22/2024
UW-Madison Probability Seminar	12/07/2023
Chinese Academy of Science Probability Seminar	09/15/2023
KAIST Probability Seminar	06/19/2023
KIAS Analysis Seminar	06/11/2023
Random Conformal Geometry and Related Fields in Jeju	06/06/2023
University of Chicago Probability and Statistical Physics Seminar	02/11/2022
KIAS Analysis Seminar	01/12/2022
University of Pennsylvania/Temple Probability Seminar	09/28/2021
Cambridge Probability Seminar	06/15/2021
MIT Probability Seminar	05/17/2021
KAIST Probability Seminar	07/07/2018

TEACHING EXPERIENCE

Instructor, MATH27000 (Basic Complex Variables), University of Chicago	Fall, Winter 2023
Instructor, MATH16300 (Honors Calculus III), University of Chicago	Spring 2023
Instructor, MATH20300 (Analysis in $\mathbb{R}^n$ I), University of Chicago	Spring 2024, Winter 2023
Recitation leader, 18.03 (Differential Equations), MIT	Fall 2020
T.A., 18.095 (Mathematics Lecture Series), MIT	IAP 2020
Recitation leader, 18.600 (Probability and Random Variables), MIT	Spring 2020, Fall 2019
T.A., 18.100A (Introduction to Analysis), MIT	Fall 2018, Fall 2017
T.A., MAS275 (Discrete Mathematics), KAIST	Spring 2015
T.A., MAS102 (Calculus II), KAIST	Fall 2013
Volunteer Tutoring, MAS101/102 (Calculus I/II), KAIST	2013
Head T.A., Tournament of the Towns Summer Program, UNIST	2012-2014
T.A., Korean Mathematical Olympiad Summer Program, KAIST	2011

MENTORING EXPERIENCE

High dimensional probability, *Colin Yao et al.*, U of Chicago DRP / reading seminar	2023
Measure theoretic probability, *M. Petersen, R. Soni*, U of Chicago REU	2023
Brownian motions, *Sarah Mostow*, U of Chicago DRP	2022

Markov chains and mixing times, *Max Yu*, MIT DRP   2020

Local limit of infinite triangulations with dual spanning tree in high genus, *C. Hong, R. Koirala, A. Saatashvili*, MIT UROP   2019

High dimensional probability, *Elizabeth Han*, MIT Directed Reading Program (DRP)   2018

A Correlated Approach to the Hamburger-Cheeseburger Theorem, *Stephen Yearwood*, MIT Undergraduate Research Opportunities Program (UROP)   2017

ORGANIZATIONAL / EDITORIAL ACTIVITIES

MIT Integration Bee: Organizer and Examiner   2017-2019
Seungsan Publisher: Editor and Translator   2014-2016
    · Korean translation of *The Princeton Companion to Applied Mathematics*
    · Korean translation of *The Princeton Companion to Mathematics*
KAIST Undergraduate Math Colloquium: Organizer   2014-2015
KAIST Guerilla Seminar: Organizer   2014-2015
Notices of the KAIST College of Natural Sciences: Editor   2013-2015

WORK EXPERIENCE

Tournament of the Towns Summer Program: Organizer   2013-2014
Republic of Korea Army: Discharged as sergeant   2011-2013