# Curriculum Vitae for Soobin Cho

University of Illinois Urbana-Champaign
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## Employment

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| **University of Illinois Urbana-Champaign** | Illinois, USA |
| J. L. Doob Research Assistant Professor | 2023.08 - |
| **Seoul National University** | Seoul, South Korea |
| Postdoctoral Fellow | 2022.09 - 2023.07 |

## Education

**Seoul National University** — Seoul, South Korea
Ph.D. in Mathematics — 2016.09 - 2022.08
Dissertation: "Estimates of heat kernels for jump processes with degeneracy and critical killing"
Academic advisor: Professor Panki Kim

**Seoul National University** — Seoul, South Korea
B.S. in Mathematics (with summa cum laude) — 2012.03 - 2016.08

## Honors, Awards and Grants

**The TJ Park Science Fellowship (for graduate students)** — 2020.01 - 2022.08
POSCO TJ Park Foundation

**Student representative in International Research Training Group 2235 (between Seoul National University and Bielefeld University)** — 2019.09 - 2022.08
National Research Foundation-Deutsche Forschungsgemeinschaft (NRF-DFG)

**Excellent Teaching Assistant Award** — 2017.02
Department of Mathematical Sciences, Seoul National University

**The Presidential Science Scholarship** — 2012.03 - 2016.08
Korea Student Aid Foundation

## Teaching

Fall 2023: MATH 444 Elementary Real Analysis

## Publications

1. **S. Cho**, P. Kim, R. Song and Z. Vondraček. Heat kernel estimates for subordinate Markov processes and their applications. *Journal of Differential Equations* 316 (2022), 28-93.

2. **S. Cho**, J. Kang and P. Kim. Estimates of Dirichlet heat kernels for unimodal Levy processes with low intensity of small jumps. *Journal of the London Mathematical Society* 104(2) (2021), 823-864.

3. **S. Cho** and P. Kim. Estimates on transition densities of subordinators with jumping density decaying in mixed polynomial orders. *Stochastic processes and their applications* 139 (2021), 229–279.

4. **S. Cho** and P. Kim. Estimates on the tail probabilities of subordinators and applications to general time fractional equations. *Stochastic processes and their applications* 130 (2020), no. 7, 4392–4443.

5. **S. Cho**, P. Kim, R. Song and Z. Vondraček. Factorization and estimates of Dirichlet heat kernels for non-local operators with critical killings. *Journal de Mathematiques Pures et Appliquees* 143 (2020), 208–256.

## Preprints

1. **S. Cho**, P. Kim, R. Song and Z. Vondraček. Heat kernel estimates for Dirichlet forms degenerate at the boundary. *arXiv preprint* available at arXiv:2211.08606 [math.PR].

2. **S. Cho**, P. Kim and J. Lee. Laws of the iterated logarithm for occupation times of Markov processes. *arXiv preprint* available at arXiv:2211.06674 [math.PR].

3. **S. Cho**, P. Kim and J. Lee. General Law of iterated logarithm for Markov processes: Liminf law. To be published in *Transactions of the American Mathematical Society, Series B.*)

4. **S. Cho**, P. Kim and J. Lee. General Law of iterated logarithm for Markov processes: Limsup law. *arXiv preprint* available at arXiv:2102.01917 [math.PR].

## Talks

1. Heat kernel estimates for Dirichlet forms vanishing at the boundary. *2023 KMS Spring Meeting, Daejeon, Korea.* April 29, 2023.

2. Stochastic analysis of nonlocal equations with Neumann conditions. *Converence on Probability and PDEs, Korea Advanced Institute of Science and Technology, Daejeon, Korea.* April 21, 2023

3. Heat kernel estimates for Dirichlet forms vanishing at the boundary. *10th Bielefeld-SNU Joint Workshop in Mathematics, Center for Interdisciplinary Research, Germany.* February 23, 2023.

4. Heat kernel estimates for Dirichlet forms degenerate at the boundary. *NCTS East Asia Core Doctoral Forum in Mathematics, National Taiwan University, Taiwan.* January 11, 2023.

5. Heat kernel estimates for Dirichlet forms degenerate at the boundary. *KIAS Analysis, PDE and Probability Seminar, Korea Institute for Advanced Study, Korea.* November 18, 2022.

6. Non-local problems with degenerate jump kernel. *Workshop on Probability and PDE (Online seminar), POSTECH, Korea.* September 19, 2022.

7. General laws of iterated logarithm for Markov processes. *Non-local operators, probability and singularities (Online seminar).* May 10, 2022.

8. Heat kernel estimates for Dirichlet forms degenerate at the boundary. *2022 KMS Spring Meeting, Seoul, Korea.* April 28, 2022.

9. General laws of iterated logarithm for Markov processes. *Probability seminar in Zagreb University, Zagreb, Croatia.* October 19, 2021.

10. Heat kernel of Markov processes on space with boundary. *2021-2 Rookies Pitch: Probability Theory, Seoul National University, Seoul, Korea.* October 5, 2021.

11. Heat kernel estimates for subordinate Markov processes and their applications. *2021 KMS Spring Meeting, Seoul, Korea.* April 30, 2021.

12. Estimates on transition densities of subordinators with jumping density decaying in mixed polynomial orders. *The 14th SNU-HU Symposium of Mathematics (Online).* November 13, 2020.

13. Estimates on transition densities of subordinators with jumping density decaying in mixed polynomial orders. *The 8th Bielefeld-SNU joint Workshop in Mathematics, poster session, Bielefeld, Germany.* February 26, 2020.

14. Estimates on the tail probabilities of subordinators and applications to general time fractional equations. *Workshop on Probability Theory and its applications, Academia Sinica, Taiwan.* December 27, 2019.

15. Estimates on the tail probabilities of subordinators and applications to general time fractional equations. *2019 KMS Annual Meeting, Seoul, Korea.* October 26, 2019.

16. Estimates on the tail probabilities of subordinators and applications to general time fractional equations. *The 1st China-Japan-Korea Joint Probability Workshop, Beijing, China.* May 11, 2019.