Name: 정슬기

Contact Information

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Education

- **Korea Advanced Institute of Science and Technology (KAIST)** Daejeon, Republic of Korea
  Ph.D. Degree in Industrial and Systems Engineering *Sep. 2012 – Feb. 2018*
  - **Advisor**: Prof. Sungsoo Park
  - **Thesis topic**: "Polyhedral Studies on Robust Mixed Integer Programming Problems"
  - **Research interests**: Robust Optimization, Combinatorial Optimization, Integer Programming, Linear Programming
- **Korea Advanced Institute of Science and Technology (KAIST)** Daejeon, Republic of Korea
  Bachelor Degree in Industrial and Systems Engineering *Feb. 2008 – Aug. 2012*

Work Experience

- **Assistant Professor** **2024.03.01 - Present**
  Industrial Engineering Department, Ajou University
- **Assistant Professor** **2020.09.01 - 2024.02.29**
  Industrial Engineering Department, Chonnam National University
  - Adjunct Professor, Graduate School of Data Science, Chonnam National University
  - Adjunct Professor, Department of Artificial Intelligence Convergence, Chonnam National University
- **Postdoctoral Researcher** **2018.03.01 - 2020.08.31**
  Industrial Engineering Department, Seoul National University

Teaching Experience

- **Assistant Professor**
  Chonnam National University, Republic of Korea
  - Operations Research 1 [IDE3013]
  - Operations Research 2 [IDE3017]
  - Systems Optimization [IDE6003]
  - Matrix and Linear Algebra [IDE2015]
  - Introduction to Algorithms [IDE6002]
  - Problem Solving and Algorithm [IDE1011]
  - Advanced Linear Programming [GR00928]
  - Advanced OR (for Graduate school of Industry and Technology) [IID5004]
  - Introduction to Decision Analysis (for Graduate school of Industry and Technology) [IID5858]
- **Lecturer**
  Soongsil University, Republic of Korea
  - Engineering Mathematics [2150693203] Fall 2018
- **Lecturer**
  Hankuk University of Foreign Studies, Republic of Korea
  - Management Science [D03380202] Spring 2018
- **Teaching Assistant**
  Korea Advanced Institute of Science and Technology, Republic of Korea
  - Special Topics in Industrial Engineering <Analysis Assessment> [IE801] Spring 2016
  - Linear Programming [IE531] Spring 2015
  - Operations Research [IE331] Spring 2013, Spring 2014

International Journal Publications (*corresponding authors)

- **S. Joung***. "Using submodularity in solving the robust bandwidth packing problem with queuing delay guarantees." *Computers & Operations Research*, 160 2023: 106374. https://doi.org/10.1016/j.cor.2023.106374
- **S. Joung***. "A new sequential lifting of robust cover inequalities." *Optimization Letters*, 2023: 1-17. https://doi.org/10.1007/s11590-023-02027-3
- **S. Joung**, S. Oh and K. Lee*. "Comparative analysis of linear programming relaxations for the robust knapsack problem." *Annals of Operations Research*, 323(1) 2023: 65-78. https://doi.org/10.1007/s10479-022-05161-w
- K. Seo, **S. Joung**, C. Lee and S. Park*. "A closest Benders cut selection scheme for accelerating the Benders decomposition algorithm." *INFORMS Journal on Computing*, 34(5) 2022: 2804-2827. https://doi.org/10.1287/ijoc.2022.1207
- J. Lee, **S. Joung*** and K. Lee*. "A fully polynomial time approximation scheme for the probability maximizing shortest path problem." *European Journal of Operational Research* 300(1) 2022: 35-45. https://doi.org/10.1016/j.ejor.2021.10.018
- **S. Joung** and S. Park*. "Robust mixed 0-1 programming and submodularity." *INFORMS Journal on Optimization* 3(2) 2021: 183-199. https://doi.org/10.1287/ijoo.2019.0042
- **S. Joung** and K. Lee*. "Robust optimization-based heuristic algorithm for the chance-constrained knapsack problem using submodularity." *Optimization Letters* 14(1) 2020: 101-113. https://doi.org/10.1007/s11590-019-01445-6
- **S. Joung**, J. Lim, C. Lee*, J. Shin, I. Jung and S. Park*. "A linear programming based heuristic algorithm for bandwidth packing problem with scheduling." *Journal of the Operational Research Society* 71(2) 2020: 250-263. https://doi.org/10.1080/01605682.2018.1542959
- SJ. Kwon, **S. Joung** and K. Lee*. "Comparative analysis of pattern-based models for the two-dimensional two-stage guillotine cutting stock problem." *Computers & Operations Research* 109 2019: 159-169. https://doi.org/10.1016/j.cor.2019.05.005
- **S. Joung** and S. Park*. "Lifting and separation of robust cover inequalities." *Networks* 72(2) 2018: 272-305. https://doi.org/10.1002/net.21829
- **S. Joung** and S. Park*. "Lifting of probabilistic cover inequalities." *Operations Research Letters* 45(5) 2017: 513-518. https://doi.org/10.1016/j.orl.2017.08.006

Domestic Journal Publications

- 이현태, 윤범, 조예림, 이수현, **정슬기***, "정수계획법을 활용한 시차를 고려한 온라인 학회 스케줄링 방법 제안." *경영과학* 40(1) 2023: 61-70. https://doi.org/10.7737/KMSR.2023.40.1.061
- 전홍배, 신기태, **정슬기***, "정량 분석을 통해 살펴본 산업공학 전공의 현황." *대한산업공학회지* 48(3) 2022: 265-270. https://doi.org/10.7232/JKIIE.2022.48.3.265 (대한산업공학회 산업공학 위상강화 TF팀, 2021-2022)
- **정슬기***, "k-부분보형 부등식과 불확실성을 고려한 이산최적화 문제." *한국경영과학회지* 47(2) 2022: 25-34. https://doi.org/10.7737/JKORMS.2022.47.2.025

Conference Presentations

- **S. Joung**. Branch-and-cut for the multiband robust optimization problems." Conference of the Korean Institute of Industrial Engineers. in Jeju, Republic of Korea. May 2023.
- **S. Joung**. "A lifting algorithm for robust cover inequalities." Conference of Korean Operations Research and Management Science Society. in Jeju, Republic of Korea. June 2022.
- **S. Joung**, J. Lee and K. Lee. "An improved approximation scheme for the stochastic shortest path problem." *Conference of the Korean Institute of Industrial Engineers.* in Seoul, Republic of Korea. November 2021.
- **S. Joung** and K. Lee. "A heuristic algorithm for the chance-constrained knapsack problem using submodularity" *EURO 2019.* in Dublin, Ireland. June 2019.
- **S. Joung** and S. Park. "Robust MIP problems and submodular inequalities." *Conference of the Korean Institute of Industrial Engineers.* in Gyeongju, Republic of Korea. April 2018.
- **S. Joung** and S. Park. "Cardinality constrained robust MIP and submodular polyhedron." *2017 INFORMS Annual Meeting.* in Houston, Texas, U.S.A. October 2017.
- **S. Joung** and S. Park. "A lifting algorithm for probabilistic cover inequalities." *Conference of the Korean Institute of Industrial Engineers.* in Jeju, Republic of Korea. April 2016.
- **S. Joung** and S. Park. "Lifting and separation of robust cover inequalities." *Conference of the Korean Institute of Industrial Engineers.* in Jeju, Republic of Korea. April 2015.

Projects

- **한국전력기술** **January 2024 - October 2024**
  "해상풍력단지 정비 스케줄링 최적화 현안 기술자문"
- **한국전력기술** **January 2023 - December 2023**
  "불확실성 기반 해상풍력단지 정비계획 모델링 및 최적화 기술자문"
- **National Research Foundation of Korea** **March 2021 - February 2024**
  "Decision making under uncertainty and k-submodularity"
- **SK Telecom** **July 2017 - February 2018**
  with Broadband Tech. Lab, Network Technology R&D center, SK Telecom, Republic of Korea
  "Traffic optimization and scheduling algorithms for L3 level transport networks"
- **SK Telecom** **October 2016 - April 2017**
  with Broadband Tech. Lab, Network Technology R&D center, SK Telecom, Republic of Korea
  "Bandwidth calendaring algorithms in the design of path computing environment (PCE) for L2 level transport networks"
- **National Research Foundation of Korea** **June 2016 - February 2018**
  "Studies on the polyhedral structures of the solution sets of robust optimization problems"
- **SK Innovation, Ph.D. Intern** **June 2014 - August 2014**
  in Optimization and Analysis Lab
  "Vessel arrival scheduling considering uncertainty"

Honors & Awards

- **교육연구 우수 교수상** **December 2021**
  College of Engineering, Chonnam National University
- **Best Ph.D. Thesis Award 2018** **October 2018**
  The Korean Operations Research and Management Science Society (KORMS)
- **Outstanding Thesis Award 2018** **February 2018**
  Department of Industrial and Systems Engineering,
  Korea Advanced Institute of Science and Technology (KAIST)

Activities

- **대한산업공학회 산업공학 교육본부** **2023 - Current**
- **대한산업공학회 산업공학 위상강화 TF팀** **2021 - 2022**
- **전남대학교 데이터사이언스대학원 개원준비단 위원** **October 2021 - February 2022**

Programming Skills

- **Languages**: Java, Python, Mosel
- **Softwares**: CPLEX, CLP, XPress