

# Jimyeong Kim

## CONTACT INFORMATION

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## RESEARCH INTERESTS

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**Decentralized Optimization, Reinforcement Learning, Control Theory(Robotcis, MPC), Harmonic Analysis, Machine Learning**

## EDUCATION

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**Sungkyunkwan University**

*Progress in integrated PhD program*

- Advisors: Woocheol Choi, Ihyeok Seo

Suwon, Republic of Korea

2018.9 - 2024.2(*expected*)

**Sungkyunkwan University**

*Bachelor of Mathematics*

Suwon, Republic of Korea

2012.3-2018.8

## PUBLICATIONS

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\*:co-1st author, +:corresponding author

**J. Kim\***, W. Choi<sup>+</sup>, Gradient-push algorithm for distributed optimization with event-triggered communications, Kim, Jimyeong; Choi, Woocheol, Gradient-push algorithm for distributed optimization with event-triggered communications, IEEE Access, vol 11 (2023) 517-534)

J. Ahn\*, **J. Kim\***, I. Seo<sup>+</sup>, On the radius of spatial analyticity for the Klein-Gordon-Schrödinger system, arXiv:2012.15514 (2020)

J. Ahn\*, **J. Kim\***, I. Seo<sup>+</sup>, Lower bounds on the radius of spatial analyticity for the Kawahara equation, Anal. Math. Phys. 11 (1) (2021) 28

J. Ahn\*, **J. Kim\***, I. Seo<sup>+</sup>, On the radius of spatial analyticity for defocusing nonlinear Schrödinger equations, Discrete Contin. Dyn. Syst. 40 (1) (2020) 423-439

## SUBMITTED PAPERS

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S. Kim\*, **J. Kim\***, H. Sul<sup>+</sup>, Y. Hong<sup>+</sup>, An Adaptive Dual-level Reinforcement Learning Approach for Optimal Trade Execution, arXiv:2307.10649

W. Choi\*, **J. Kim\***<sup>+</sup>, On the convergence analysis of the decentralized projected gradient descent, arXiv:2303.08412 (2023)

W. Choi\*, **J. Kim\***<sup>+</sup>, On the convergence of decentralized gradient descent with diminishing stepsize, revisited, arXiv:2203.09079 (2022)

## RESEARCH EXPERIENCE

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**Youngjoon Hong/ Sungkyunkwan University, Hongkee Seol/ Chung-Ang University, SK C&C and KB Securities (February 2022 - September 2022)**

- Developed the algorithm for optimal trade execution

**Woocheol Choi/ Sungkyunkwan University (February 2022 -)**

- Researched convergence analysis and developed algorithms for reinforcement learning

**Woocheol Choi/ Sungkyunkwan University & Hancheol Choi/ Hyundai Robotics (February 2022 -)**

- Researched optimal trajectory planning

## **Woocheol Choi/ Sungkyunkwan University (February 2021 -)**

- Researched convergence analysis for decentralized optimization

## **Ihyeok Seo/ Sungkyunkwan University (September 2018 - December 2020)**

- Researched Spatial Analyticity for dispersive systems

## TALKS

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August 22, 2023, 10th International Congress on Industrial and Applied Mathematics, Waseda University, Tokyo

November 24, 2022, KSIAM 2022 Annual Meeting, Jeju SONO Calm, Jeju, Republic of Korea

August 8, 2019, 7th East Asian Conference in Harmonic Analysis and Applications, Chung-Ang University, Seoul, Republic of Korea

## HONORS AND AWARDS

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2022, BK21 Research Encouragement Scholarship, Sungkyunkwan University

2021, URP(Undergraduate Research Program) TA Scholarship, Sungkyunkwan University

2021, BK21 Focused Research Scholarship, Sungkyunkwan University

2015, A bronze prize, Korean College Students Mathematical Competition, Korea Math Society

## TEACHING ASSISTANT

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**Complex Analysis (Spring 2020 - 2021 & Fall 2019 - 2020)**, Sungkyunkwan University, Suwon, Republic of Korea

**Partial Differential Equation (Spring 2019 - 2020)**, Sungkyunkwan University, Suwon, Republic of Korea

**Linear Algebra (Spring 2021)**, Sungkyunkwan University, Suwon, Republic of Korea

**Analysis (Fall 2020)**, Sungkyunkwan University, Suwon, Republic of Korea

**Real Analysis (Spring 2020)**, Sungkyunkwan University, Suwon, Republic of Korea

**Topology (Fall 2019)**, Sungkyunkwan University, Suwon, Republic of Korea

**Differential Geometry (Fall 2019)**, Sungkyunkwan University, Suwon, Republic of Korea

**Calculus (Spring 2019 & Fall 2018)**, Sungkyunkwan University, Suwon, Republic of Korea

**Set Theory (Spring 2019)**, Sungkyunkwan University, Suwon, Republic of Korea

**Discrete Mathematics (Fall 2018)**, Sungkyunkwan University, Suwon, Republic of Korea

## REFERENCES

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### **Prof. Woocheol Choi**

- Advisor
- Professor of Department of Mathematics, Sungkyunkwan University, Suwon, Republic of Korea
- choiwc@skku.edu

### **Prof. Youngjoon Hong**

- Co-worker
- Professor of Department of Mathematics, Sungkyunkwan University, Suwon, Republic of Korea
- hongyj@skku.edu

### **Prof. Ihyeok Seo**

- Advisor
- Professor of Department of Mathematics, Sungkyunkwan University, Suwon, Republic of Korea
- ihseo@skku.edu