

Hanse Kim

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Education

Gwangju Institute of Science and Technology

BSc, Physics and Photonic Sciences Major, Mathematics Minor

- TGPA : 4.15/4.5 (25/05/10)
- Total Percentage : 96.5

Spring 2019 - Current

Gwangju, South Korea

University of California, Berkeley

Exchange Program via Study Abroad Program

Spring 2024

Berkeley, US

Research Experience

Holographic Correlation Functions

March 2023 - December 2023

- Calculate holographic correlation functions using AdS/CFT with Mathematica
- Supervised by Prof. Chanyong Park

First-last Passage Correspondences

September 2023 – December 2023

- Investigate first-last passage in diffusion problems
- Parallel programming and GPU acceleration with PyTorch
- Supervised by Prof. Chiok Hwang

Inverse Spectral Problems via Neural Networks

August 2024 – December 2024

- Develop neural network models for solving inverse Schrödinger spectral problems
- Physically informed neural network methods
- Supervised by Prof. Keun-Yeong Kim

Teaching Experience

Calculus TA

Spring 2023

Complex Analysis TA

Autumn 2023

Introduction to Topology TA

Spring 2025

Publications (Published)

Kim, Hanse, Jitendra Pal, and Chanyong Park. "Holographic description for correlation functions." *Physical Review D* 109.12 (2024): 126019.

Publications (Submitted)

Park, Chanyong, **Hanse Kim**, and Kyungchan Cho. "Time evolution of two-point function in expanding universes." *arXiv preprint arXiv:2405.15168* (2024).

Relevant Academic Activity

Functional Analysis Directed Reading

March 2023 - June 2023

- Monthly presentations based on Brezis - Functional Analysis
- Supervised by Prof. Jaegil Kim

GIST Summer Internship

July 2024

- ML construction of holographic geometry; replication of papers 1, 2, 3, 4
- ML construction of MOND interpolating function
- Supervised by Prof. Keun-Yeong Kim

IonQ Mentoring Program

September 2024 - October 2024

- Develop framework for optimisation of Trotterised circuits

Scholarships and Awards

Merit Scholarship : 19' Spring, 20' Spring, Autumn

National Science & Technology Scholarship : 23' Spring, Autumn

Korea Physical Society Undergraduate Research Competition : Third Prize

Specialized Skills

Programming Languages: Python (pandas, PyTorch), Mathematica

General Software: Latex (Bibtex), Github

English Proficiency: TOEFL 113/120, TOEIC 990/990

Other Interests

Orchestra: GIST Orchestra Clarinet (2019-2025), Organiser (2023)