

Yesom Park

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Work Experience

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| 2025.9~ | Hedrick Assistant Adjunct Professorship , Department of Mathematics,
University of California, Los Angeles |
| 2024.9~2025.8 | Research Fellow , Department of Mathematics,
University of California, Los Angeles |
| 2024.3~2024.8 | Research Assistant, Research Institute of Mathematics, Seoul National
University |

EDUCATION

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|-----------|---|
| 2020~2024 | Seoul National University , Seoul, South Korea
Ph.D. in Mathematical Sciences |
| 2018~2020 | Ewha Womans University , Seoul, South Korea
M. in Mathematics |
| 2014~2018 | Ewha Womans University , Seoul, South Korea
B.A. in Mathematics |

PUBLICATIONS

- Neural Shortest Path for Surface Reconstruction from Point Clouds,
Yesom Park, Imseong Park, Jooyoung Hahn, and Myungjoo Kang.
International Journal of Computer Vision, 2026.
- Scalable Fixed-Point Framework for High-Dimensional Hamilton-Jacobi Equations,
Yesom Park, and Stanley Osher.
SIAM Journal on Scientific Computing, 2026.
- Localized Estimation of Condition Numbers for MILU Preconditioners on a Graph,
Geonho Hwang, **Yesom Park**, Yueun Lee, Jooyoung Hahn, and Myungjoo Kang.
SIAM Journal on Numerical Analysis, 64 (4), 2026.
- Neural Hamilton-Jacobi Characteristic Flows for Optimal Transport,
Yesom Park, Shu Liu, Mo Zhou, and Stanley Osher.
International Conference on Learning Representation, 2025.
- Neural Implicit Solution Formula for Efficiently Solving Hamilton-Jacobi Equations,
Yesom Park, and Stanley Osher.
SIAM Journal on Scientific Computing, 47 (6), 2025.
- How does PDE order affect the convergence of PINNs?,
Chang hoon Song*, **Yesom Park***, and Myungjoo Kang.
Advances in Neural Information Processing Systems, 2024.

- Analysis of efficient preconditioner for solving Poisson equation with Dirichlet boundary condition in irregular three-dimensional domains,

Geonho Hwang, **Yesom Park**, Yueun Lee, and Myungjoo Kang.

Journal of Computational Physics, 519, 2024.

- ReSDF: Redistancing implicit surfaces using neural networks,

Yesom Park, Chang hoon Song, Jooyoung Hahn, and Myungjoo Kang.

Journal of Computational Physics, 502, 2024.

- p-Poisson surface reconstruction in irrotational flow from point clouds,

Yesom Park*, Taekyung Lee*, Jooyoung Hahn, and Myungjoo Kang.

Advances in Neural Information Processing Systems, 2023.

- Restoration based generative models,

Jaemoo Choi*, **Yesom Park***, and Myungjoo Kang.

International Conference of Machine Learning, 2023.

- Solving incompressible Navier-Stokes equations on irregular domains and quadrees by monolithic approach,

Hyungtae Choi, **Yesom Park**, and Myungjoo Kang.

Journal of Computational Physics, 463, 2022.

- An optimal control approach to conformal flattening of triangulated surfaces,

Yesom Park, Byungjoon Lee, and Chohong Min.

KSIAM, 23, 2019.

- An energy-stable and second-order accurate method for solving the incompressible Navier-Stokes equations,

Jeongho Kim, Jinwook Jung, **Yesom Park**, Chohong Min, and Byungjoon Lee.

KSIAM, 23, 2019.

- An optimal Boosting algorithm based on nonlinear conjugate gradient,

Jooyeon Choi, Bora Jeong, **Yesom Park**, Jiwon Seo, and Chohong Min.

KSIAM, 22, 1-13, 2019.

- An efficient MILU preconditioning for solving the 2D Poisson equation with Neumann boundary condition,

Yesom Park, Jeongho Kim, Jinwook Jung, Euntaek Lee, and Chohong Min.

Journal of Computational Physics, 356, 2018.

Preprints

- Implicit Neural Optimal Transport via Fixed-Point Optimization

Yesom Park, Eric Gelphman, Stanley Osher, and Samy Wu Fung,

arXiv preprint arXiv:2605.10792, 2026.

- SymPlex: A Structure-Aware Transformer for Symbolic PDE Solving

Yesom Park, Annie Lu, Shao-Ching Huang, Qiyang Hu, Sungtaek Ju, and Stanley Osher.

arXiv preprint arXiv:2602.03816, 2026.

- Dynamical Implicit Neural Representations,

Yesom Park, Kelvin Kan, Thomas Flynn, Yi Huang, Shinjae Yoo, Stanley Osher, and Xihaier Luo.

arXiv preprint arXiv:2511.21787, 2025.

- Beyond derivative pathology of PINNs: Variable splitting strategy with convergence analysis,

Yesom Park, Chang hoon Song, and Myungjoo Kang.

arXiv preprint arXiv:2409.20383, 2024.

* Denote Equal First Author.

- Learning PDE solution operator for continuous modeling of time-series,

Yesom Park*, Jaemoo Choi*, Changyeon Yoon*, and Myungjoo Kang.

arXiv preprint arXiv:2302.00854, 2022.

FUNDINGS

2025.9~	DoE CT-GenAI (No. DoE DE-SC0026262), Key Researcher, Proposal contributor
2025.8~	DARPA The Right Space (No. HR00112590074), Key Researcher, Proposal contributor
2024.9~2025.8	Sejong Science Fellowship Grants Overseas Training Track, PI

SCHOLARSHIPS AND AWARDS

Scholarships

2023.3~2024.2	Teaching and Research Assistant Scholarship
2020.3~2023.2	Brain Korea 21 Scholarship
2018.3~2019.2	Brain Korea 21 Scholarship
2018.3~2019.2	Research Assistant Scholarship
2017.3~2018.2	Honors Scholarship
2014.3~2010.27	National Grant Scholarship
2014.3~2015.2	Admissions Scholarship

Awards

2024 *The First Prize of the EASIAM 2024 Student Paper Prize*

2022 *Outstanding Teaching Assistant Awards* in Seoul National University College of Natural Science

2024 *Best Doctoral Dissertation Award* in Seoul National University College of Natural Science

TEACHING EXPERIENCE

Winter 2025	Programming in Computing 16A: Python with Applications I (course instructor)
Fall 2025, Spring 2026	Programming in Computing 10A: Introduction to Programming (course instructor)
Winter 2023	Introduction to Numerical Analysis, department of mathematical sciences, Seoul National University (course coordinator)
Spring 2022 ~ Spring 2023	Honor Calculus Practice, department of mathematical sciences, Seoul National University (teaching assistant)
Spring 2020 ~ Winter 2021	Calculus Practice, department of mathematical sciences, Seoul National University (teaching assistant)
Winter 2019	Partial Differential Equations, department of mathematics, Ewha Womans University (course coordinator)
Spring 2019	Discrete Mathematics and Programming, department of mathematics, Ewha Womans University (course coordinator)
Spring 2018 ~ Spring 2019	Complex Analysis, department of mathematics, Ewha Womans University (course coordinator)
Winter 2017	Linear Algebra, Ewha Womans University (course coordinator)

PROFESSIONAL EXPERIENCE

2023~Present	Participant Researcher in Government funded Project Project title: DFM: Data-driven flow modeling research laboratory with Agency for Defense Development and Defense Agency for Technology and Quality.
2020~2021	Participant Researcher in National Research and Development Project Project title: AI-based precision medicine Emergency medical system development with Telecommunications Technology Association and Severance Hospital of Yonsei university.

ACADEMIC SERVICE

Editorial Activities

Guest Editor, Journal of Computational Physics, Special Issue on Advances in Optimal Transport, 2026.

Peer Reviewing

Technical Reviewer (Gold), International Conference on Machine Learning (2026).

Reviewer, Mathematical Reviews (MathSciNet), American Mathematical Society (2026)

Reviewer, The International Conference on Learning Representations (2025, 2026)

Reviewer, The International Conference on Artificial Intelligence and Statistics (2025, 2026)

Reviewer, SIAM Journal on Scientific Computing (2025)

Reviewer, Journal of Computational Physics (2025)

Reviewer, Advances in Neural Information Processing Systems (2024,2025,2026)

Reviewer, Neural Networks (2025)

Reviewer, The International Conference on Machine Learning (2025)

Reviewer, Transactions on Machine Learning Research (2024)