

Jaewook J. Suh

CONTACT INFORMATION	6100 Main St MS 364, Houston, TX 77005, Department of Computational Applied Math and Operations Research, Rice University	<i>E-mail:</i> jacksuh@rice.edu <i>Website:</i> https://jaewookjsuh.github.io/
RESEARCH INTERESTS	Convex Optimization, Adaptive First-Order Methods, Computer-Assisted Algorithm Analysis, Accelerated Algorithms, Optimization for Machine Learning	
RESEARCH EXPERIENCE	Rice University <i>Postdoctoral Researcher</i> <ul style="list-style-type: none">• Advisor: Professor Shiqian Ma [website]	2024 – Present
EDUCATION	Seoul National University <i>Ph.D in Mathematical Sciences</i> <ul style="list-style-type: none">• Advisor: Professor Ernest K. Ryu [website] Seoul National University <i>B.S. in Mathematics and Physics</i> <i>Teacher Certification Regulations of Mathematics and Physics</i>	2024 2017
PUBLICATIONS	Published <ol style="list-style-type: none">1. J. Park*, J. J. Suh*, B. Wang, A. Bhattacharya, S. Ma. <i>Adaptive Gradient Descent on Riemannian Manifolds and Its Applications to Gaussian Variational Inference</i>. ICLR, 2026. *Lead authors2. J. J. Suh, B. Ying, X. Jiang, E. D. H. Nguyen. <i>PEPFlow: A Python Library for the Workflow of Performance Estimation of Optimization Algorithms</i>. NeurIPS Workshop on GPU-accelerated and Scalable Optimization, 2025. [Website] [Github]3. S. P. Boyd, T. Parshakova*, E. K. Ryu, and J. J. Suh*. <i>Optimization Algorithm Design via Electric Circuits</i>. NeurIPS (spotlight, 2.1%), 2024. [Github] *Lead authors (alphabetical)4. T. Yoon, J. Kim, J. J. Suh, and E. K. Ryu. <i>Optimal Acceleration for Minimax and Fixed-Point Problems is Not Unique</i>. ICML (spotlight, 3.5%), 2024.5. J. J. Suh, J. Park, and E. K. Ryu. <i>Continuous-time Analysis of Anchor Acceleration</i>. NeurIPS, 2023.6. J. J. Suh, G. Roh, and E. K. Ryu. <i>Continuous-time Analysis of Accelerated Gradient Methods via Conservation Laws in Dilated Coordinate Systems</i>. ICML (long presentation, top 2%), 2022. Preprints <ol style="list-style-type: none">1. J. J. Suh, S. Ma. <i>An Adaptive and Parameter-Free Nesterov’s Accelerated Gradient Method for Convex Optimization</i>. 2025.2. E. D. H. Nguyen, J. J. Suh, X. Jiang, S. Ma. <i>Exact worst-case convergence rates for Douglas–Rachford and Davis–Yin splitting methods</i>. 2025.3. R. Park, J. J. Suh, Y. Hong, E. K. Ryu. <i>Numerical Analysis of HiPPO-LegS ODE for Deep State Space Models</i>. 2024.	
RESEARCH SOFTWARE	PEPFlow [website] [Github] Contributing to the development of PEPFlow <ul style="list-style-type: none">• Open-source Python library for computer-assisted analysis of optimization algorithms• Provides infrastructure for interactively constructing convergence proofs via the PEP workflow• Supports symbolic and numerical verification of worst-case convergence guarantees	2025 – Present

AWARDS & HONORS	Postdoctoral Fellowship Program (Nurturing Next-Generation Researchers), granted by the National Research Foundation of Korea (NRF)	2024
	Google Travel Grant Award to attend ICML	2022
	Excellent Teaching Assistant Award	2019
	National Scholarship for Science and Engineering	2013
PRESENTATIONS	Adaptive and Tuning-free First-Order Methods via Lyapunov Analysis	
	• Seminar, Department of Combinatorics & Optimization, University of Waterloo	Feb 2026
	PEPFlow: A Python Library for the Workflow of Performance Estimation of Optimization Algorithms	
	• Cornell ORIE Young Researchers Workshop (Poster)	Oct 2025
	An Adaptive and Parameter-Free Nesterov's Accelerated Gradient Method for Convex Optimization	
	• INFORMS Optimization Society Conference (IOS)	Mar 2026
	• INFORMS Annual Meeting	Oct 2025
	• International Conference on Continuous Optimization (ICCOPT)	Jul 2025
	Optimization Algorithm Design via Electric Circuits	
	• AI-Owls meeting (Rice University)	Mar 2025
	• Quantitative Methods Seminar (Purdue University)	Mar 2025
	• KIAS Center for AI and Natural Sciences Seminar	Jan 2025
	• Neural Information Processing Systems (Poster)	Dec 2024
	Optimization Algorithm Design by Continuous-time Analysis	
	• KMS Spring Meeting	Apr 2024
	• UNIST Workshop Optimization & Machine learning	Aug 2023
	Continuous-time Analysis of Anchor Acceleration	
• Neural Information Processing Systems (Poster)	Dec 2023	
• CJ CheilJedang Tech Talk	Jul 2023	
• AIIS Fall Retreat (Poster)	Nov 2022	
Continuous-time Analysis of AGM via Conservation Laws in Dilated Coordinate Systems		
• SIAM Conference on Optimization	May 2023	
• Samsung AI Forum (Poster)	Nov 2022	
• INFORMS Annual Meeting	Oct 2022	
• International Conference on Machine Learning	Jul 2022	
• AIIS Spring Retreat (Poster)	Apr 2022	
TEACHING	Instructor, Seoul National University	
	• Exercises in Introduction to Mathematical Analysis I	Spring 2020
	• Exercises in Introduction to Mathematical Analysis II	Fall 2020
	• Exercises in Calculus I	Spring 2019, Spring 2021
	• Exercises in Calculus II	Fall 2018, Fall 2019, Spring 2022
	- Average student course evaluation score: 9.96/10	
	Teaching Assistant, Seoul National University	
	• Mathematical Foundations of Deep Neural Networks	Spring 2024
	• Calculus for Life Science I	Fall 2023
	• Differential Equations	Spring 2023
• Mathematical and Numerical Optimization	Fall 2021, Fall 2022	
• Linear Algebra	Spring 2021	
• Mathematics for Economics and Business	Spring 2020, Fall 2020	

- Introduction to Mathematical Analysis I, II Spring 2020, Fall 2020
- Engineering Mathematics I, II Summer 2019, Fall 2019
- Calculus I, II Fall 2018–Fall 2019, Spring 2021, Spring 2022

Teaching Practicum, Seoul National University Middle School (Physics) May 2016

- Completed a one-month student teaching experience at a middle school
- Gained hands-on experience in classroom instruction and student engagement

MENTORSHIP

- Collaborated with undergraduate interns on research (published at ICML 2022, 2024) Aug 2019
 Seoul National University College of Natural Science Camp (TA, Mathematics) 2012–2014
 Intercollegiate Education Outreach Club Activity
- Visited various middle and high schools across the region to mentor students
 - Provided studying tips on an online website through columns and Q&A
 - Served as Club Officer (Fall 2013) and President (Spring 2014)

PROFESSIONAL SERVICES

Reviewer

- Journal of Machine Learning Research (JMLR)
- Neural Information Processing Systems (NeurIPS)
- International Conference on Learning Representations (ICLR)
- Journal of Optimization Theory and Applications
- Journal of Scientific Computing
- NeurIPS Workshop on GPU-accelerated and Scalable Optimization (ScaleOPT)

Conference Organization

- Session Organizer, INFORMS Optimization Society Conference (IOS) 2026
 - “Systematic Analysis of Optimization Algorithms Leveraging Computer-Assisted Proofs”

SKILLS

Python, Java, C++, MATLAB, LaTeX, XML