

# Jaewook J. Suh

CONTACT INFORMATION	6100 Main St MS 364, Houston, TX 77005, Department of Computational Applied Math and Operations Research, Rice University	E-mail: <a href="mailto:jacksuh@rice.edu">jacksuh@rice.edu</a> Website: <a href="https://jaewookjsuh.github.io/">https://jaewookjsuh.github.io/</a>
RESEARCH INTERESTS	Convex Optimization, Computer-Assisted Algorithm Analysis, Adaptive Accelerated Algorithms, Optimization for Machine Learning	
RESERACH EXPERIENCE	<b>Rice University</b> <i>Postdoc</i> <ul style="list-style-type: none"><li>• Advisor: Professor Shiqian Ma [<a href="#">website</a>]</li></ul>	2024 – Present
EDUCATION	<b>Seoul National University</b> <i>Ph.D in Mathematical Sciences</i> <ul style="list-style-type: none"><li>• Advisor: Professor Ernest K. Ryu [<a href="#">website</a>]</li></ul> <b>Seoul National University</b> <i>B.S. in Mathematics and Physics</i> <i>Teacher Certification Regulations of Mathematics and Physics</i>	2024
PUBLICATIONS	<b>Published</b> <ol style="list-style-type: none"><li>1. <b>J. J. Suh</b>, 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.</li><li>2. S. P. Boyd, T. Parshakova*, E. K. Ryu, and <b>J. J. Suh</b>*. <i>Optimization Algorithm Design via Electric Circuits</i>. NeurIPS (spotlight), 2024. *Lead authors (author list ordered alphabetically)<ul style="list-style-type: none"><li>- Top 326/15671=2.1% of papers</li></ul></li><li>3. T. Yoon, J. Kim, <b>J. J. Suh</b>, and E. K. Ryu. <i>Optimal Acceleration for Minimax and Fixed-Point Problems is Not Unique</i>. ICML (spotlight), 2024.<ul style="list-style-type: none"><li>- Top 335/9483=3.5% of papers.</li></ul></li><li>4. <b>J. J. Suh</b>, J. Park, and E. K. Ryu. <i>Continuous-time Analysis of Anchor Acceleration</i>. NeurIPS, 2023.</li><li>5. <b>J. J. Suh</b>, 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), 2022.<ul style="list-style-type: none"><li>- Top 118/5630=2% of papers</li></ul></li></ol> <b>Preprints</b> <ol style="list-style-type: none"><li>1. <b>J. J. Suh</b>, S. Ma. <i>An Adaptive and Parameter-Free Nesterov's Accelerated Gradient Method for Convex Optimization</i>. (under review in Mathematical Programming), 2025.</li><li>2. J. Park*, <b>J. J. Suh</b>*, B. Wang, A. Bhattacharya, S. Ma. <i>Adaptive Gradient Descent on Riemannian Manifolds and Its Applications to Gaussian Variational Inference</i>. (accepted to ICLR), 2025. *Lead authors</li><li>3. E. D. H. Nguyen, <b>J. J. Suh</b>, X. Jiang, S. Ma. <i>Exact worst-case convergence rates for Douglas–Rachford and Davis–Yin splitting methods</i>. (under review in INFORMS Journal on Optimization), 2025.</li><li>4. R. Park, <b>J. J. Suh</b>, Y. Hong, E. K. Ryu. <i>Numerical Analysis of HiPPO-LegS ODE for Deep State Space Models</i>. (under revision in TMLR), 2024.</li></ol>	2024
WORK EXPERIENCE	<b>Intern &amp; App Developer (Android)</b> <i>AILab, AIBrain</i>	2016–2017

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	<b>PEPFlow: A Python Library for the Workflow of Performance Estimation of Optimization Algorithms.</b>	
	• Cornell ORIE Young Researchers Workshop (poster)	2025/10
	<b>An Adaptive and Parameter-Free Nesterov's Accelerated Gradient Method for Convex Optimization</b>	
	• INFORMS Annual Meeting	2025/10
	• International Conference on Continuous Optimization (ICCOPT)	2025/07
	<b>Optimization Algorithm Design via Electric Circuits</b>	
	• AI-Owls meeting (Rice University)	2025/03
	• Quantitative Methods Seminar (Purdue University)	2025/03
	• KIAS Center for AI and Natural Sciences Seminar	2025/01
	• Neural Information Processing Systems (poster)	2024/12
	<b>Optimization Algorithm Design by Continuous-time Analysis</b>	
	• KMS Spring Meeting	2024/04
	• UNIST Workshop Optimization & Machine learning	2023/08
	<b>Continuous-time Analysis of Anchor Acceleration</b>	
	• Neural Information Processing Systems (poster)	2023/12
	• CJ CheilJedang Tech Talk	2023/07
	• AIIS Fall Retreat (poster)	2022/11
	<b>Continuous-time Analysis of AGM via Conservation Laws in Dilated Coordinate Systems</b>	
	• SIAM Conference on Optimization	2023/05
	• Samsung AI Forum (poster)	2022/11
	• INFORMS Annual Meeting	2022/10
	• International Conference on Machine Learning	2022/07
	• AIIS Spring Retreat (poster)	2022/04
TEACHING	<b>Instructor, Seoul National University</b>	
	• 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	
	<b>Teaching Assistant, Seoul National University</b>	
	• 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

	<b>Teaching Practicum, Seoul National University Middle School (Physics)</b>	2016/05
	<ul style="list-style-type: none"> <li>Completed a one-month student teaching experience at a middle school</li> <li>Gained hands-on experience in classroom instruction and student engagement</li> </ul>	
MENTORSHIP	<p>Collaborated with undergraduate interns on research (published at ICML 2022, 2024)</p> <p>Seoul National University College of Natural Science Camp (TA, Mathematics)</p> <p>Intercollegiate Education Outreach Club Activity</p> <ul style="list-style-type: none"> <li>Visited various middle and high schools across the region to mentor students</li> <li>Provided studying tips on an online website through columns and Q&amp;A</li> <li>Served as Club Officer (Fall 2013) and President (Spring 2014)</li> </ul>	2019/08 2012–2014
PROFESSIONAL SERVICES	<b>Reviewer</b>	
	<ul style="list-style-type: none"> <li>Neural Information Processing Systems (NeurIPS)</li> <li>International Conference on Learning Representations (ICLR)</li> <li>Journal of Optimization Theory and Applications</li> <li>Journal of Scientific Computing</li> <li>NeurIPS Workshop on GPU-accelerated and Scalable Optimization (ScaleOPT)</li> </ul>	
SKILLS	Python, Java, C++, MATLAB, LaTeX, XML	