

# Gina Sohn

ginasohn@stanford.edu

[Website](#) [LinkedIn](#)

**Research interests** **Hardware Accelerator, Domain-specific Language, Compiler, HW/SW Co-design**

**Education** **Stanford University** Sep.2022 - Present  
Ph.D., Electrical Engineering (Advisor: **Kunle Olukotun**)

**Seoul National University** Mar.2018 - Aug.2022  
Bachelor of Science, Computer Science and Engineering  
Total GPA of 4.16 / 4.3 (Summa Cum Laude)

**Publications** **Streaming Tensor Program: A streaming abstraction for dynamic parallelism**  
Gina Sohn, Genghan Zhang, Konstantin Hossfeld, Jungwoo Kim, Nathan Sobotka, Nathan Zhang, Olivia Hsu, Kunle Olukotun  
*Proceedings of the International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Mar. 2026* [[paper](#)]

**The Dataflow Abstract Machine Simulator Framework**  
Nathan Zhang, Rubens Lacouture, Gina Sohn, Paul Mure, Qizheng Zhang, Fredrik Kjolstad, Kunle Olukotun  
*Proceedings of the International Symposium on Computer Architecture (ISCA), June 2024* [[paper](#)]  
 **ISCA Distinguished Artifact Award**

**ARK: Fully Homomorphic Encryption Accelerator with Runtime Data Generation and Inter-Operation Key Reuse**  
Jongmin Kim, Gwangho Lee, Sangpyo Kim, Gina Sohn, John Kim, Minsoo Rhu, and Jung Ho Ahn  
*Proceedings of the 55th IEEE/ACM International Symposium on Microarchitecture (MICRO), Oct., 2022.* [[paper](#)]

**Behemoth: A Flash-centric Training Accelerator for Extreme-scale DNNs**  
Shine Kim, Yunho Jin, Gina Sohn, Jonghyun Bae, Tae Jun Ham, and Jae W. Lee.  
*Proceedings of the 19th USENIX Conference on File and Storage Technologies (FAST), Feb, 2021.*  
[[paper](#)] [[slides](#)]

**Workshop** **Dynamic Memory for Distributed Architectures**  
Gina Sohn, Genghan Zhang, Suguna Velury, Nathan Zhang, Kunle Olukotun  
*The Sixth Young Architect Workshop* (Organized in conjunction with ASPLOS 2024)  
[[pdf](#)]

**Honors and Scholarships** **Graduate Research Fellowship Program**, National Science Foundation, 2025-2028  
**Stanford Graduate Fellowship (Burt & Deedee McMurtry Fellow)**, Stanford University, 2022-2025  
**Silver Prize**, Academic Festival of College of Liberal Studies, Seoul National University, 2021  
**National Scholarship for Science and Engineering**, Korea Student Aid Foundation, 2020-2021  
**Eminence Scholarship**, Seoul National University, 2019

<b>Research Experience</b>	<b>Pervasive Parallelism Laboratory</b> (Advisor: Kunle Olukotun) Stanford University	Apr.2023 – Present Sep.2022 – Dec.2022
	<b>Stanford Accelerate Laboratory</b> (Advisor: Priyanka Raina) Stanford University	Jan.2023 – Mar.2023
	<b>SCALable Computer Architecture Laboratory</b> (Advisor: Jung Ho Ahn) Jan.2022 – Apr.2022 Graduate School of Convergence Science and Technology, Seoul National University	
	<b>Architecture and Code Optimization Laboratory</b> (Advisor: Jae W. Lee) Jul.2020 – Sep.2020 Samsung-SNU Cooperation R&D Center, Seoul National University	
<b>Teaching Experience</b>	<b>Digital Systems Design Lab</b> , Stanford University <i>Teaching Assistant</i> <ul style="list-style-type: none"><li>Topics covered: Software / hardware design tradeoffs, Algorithm design for pipelining and parallelism, System latency and throughput tradeoffs, FPGA optimization techniques.</li></ul>	Apr.2024 - Jun.2021
	<b>Computer Programming</b> , Seoul National University <i>Teaching Assistant</i> <ul style="list-style-type: none"><li>Covered C++ and Java programming, Object-Oriented Programming</li><li>Revised lab materials and assignment descriptions, Participated in weekly Professor-TA meetings, Administered laboratories for 170 students every week, Answered questions online</li></ul>	Sep.2021 - Dec.2021
<b>Extracurricular &amp; Leadership Activity</b>	<b>Stanford Women in Electrical Engineering (WEE)</b>	Sep.2023 – Present
	<b>Seoul National University College of Engineering Honor Society (STEM)</b> <i>Academic Activity Director (Sep.2021-Feb.2022)</i>	Mar.2021 – Jun.2022
	<b>Korean-American Women in Science and Engineering (KWiSE)</b> <i>2021 Mentee Team Leader (Chapter: Los Angeles, USA)</i>	Mar.2021 – Dec.2022
	<b>Seoul National University Security Research Group (Guardian)</b>	Mar.2019 - Jul.2019