

SUNGHEE YUN

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SUMMARY

I am Co-Founder & CTO @ Erudio Bio, Inc., CA, USA, Co-Founder & CEO @ Erudio Bio Korea, Inc., Korea, a KFAS-Salzburg Global Leadership Initiative Fellow @ Salzburg Global Seminar, Salzburg, Austria, an Adjunct Professor @ Sogang University, Seoul, South Korea, an Advisory Professor @ Daegu Gyeongbuk Institute of Science & Technology (DGIST), South Korea, Global Advisory Board Member @ Innovative Future Brain-Inspired Intelligence System Semiconductor of Sogang University, Network Expert @ Gerson Lehrman Group, Inc., Chief Business Development Officer (CBDO) @ WeStory.ai, CA, USA, and Advisor @ CryptoLab, Inc., CA, USA.

Before founding the new AI biotech company, I co-founded Gauss Labs, Inc., an industrial AI company, built and ran the US Headquarters of Gauss Labs, spearheaded research & development of the core technology & products. Before Gauss Labs, I drove various AI technology and product developments and productionizations in the field of e-Commerce @ Amazon.com, Inc. where one of the projects created a 200 USD revenue increase via the Amazon Mobile Shopping App. Before Amazon, I worked for Software Research Center, Strategic Sales & Marketing Team, Design Technology Team & Computer-Aided Engineering (CAE) Team of Samsung Semiconductor, Inc. where I developed diverse AI and optimization tools for semiconductor chip designers, manufacturing engineers & test engineers where more than 200 engineers still use the circuit optimization tools and generic AI optimization platform, dubbed iOpt, every day.

I received a BS degree in Electrical Engineering (EE) from Seoul National University (SNU), Seoul, South Korea and MS & Ph.D. degrees in EE from Stanford University, CA, USA under supervision of Prof. Stephen Boyd, who is a legendary figure in the field. (Having him as my advisor was one of the luckiest things that have ever happened to my life!)

I specialize in Artificial Intelligence (AI) and Convex Optimization leading cutting-edge projects across diverse sectors including semiconductor design, strategic marketing with market intelligence, e-commerce, industrial AI, and biotech while driving business development, connecting people, and consulting people in diverse industries. My focus is on leveraging the AI technology especially around AI agents which essentially based on the recent breakthroughs of large language models (LLM) and multimodal generative AI (GenAI) to drive business innovation, predict industry trends, assess their broad impacts on society, economy, and policy, provide policy and technology recommendations by understanding and having differentiated insight into technology, industry, business, and markets.

As the Leader of Silicon Valley Privacy Preserving AI Forum (K-PAI), I foster collaboration between industry leaders, researchers, and policymakers to advance responsible AI technologies and establish ethical frameworks for AI deployment across critical sectors including healthcare, finance, and biotechnology. K-PAI serves as a vital bridge connecting cutting-edge AI research with real-world applications, where my experience at companies like Erudio Bio, Gauss Labs, Amazon, and Samsung provides unique insights into the practical challenges of implementing secure and trustworthy AI solutions at scale. Through K-PAI's seminars, workshops, and policy discussions, I work to ensure that as AI systems become more pervasive, they are built with responsible design principles that balance innovation with societal benefits, particularly addressing the complex regulatory landscapes across the US, Europe, and Asia-Pacific regions where different technological standards and cultural expectations around AI governance create both challenges and opportunities for sustainable AI development that serves humanity's long-term interests.

As a KFAS-Salzburg Global Leadership Initiative Fellow, I develop actionable solutions for the challenges posed by a rapidly changing world by AI. My work focuses on "Technology, Growth, and Inequality: The Case of AI," within the broader theme of "Uncertain Futures and Connections Reimagined: Connecting Technologies." I also actively contribute to AI and semiconductor technology policy making, advising state and national governments while considering the geopolitical dynamics of key players like the US, China, Japan, Taiwan, and South Korea.

I also dedicate to fostering knowledge, insight, and experience transfer and innovation by serving as an Adjunct Professor of Department of Electronic Engineering @ Sogang University, Seoul, South Korea, an Advisory Professor of Department of Electrical Engineering & Computer Science (EECS) @ Daegu Gyeongbuk Institute of Science & Technology (DGIST), South Korea, and Global Advisory Board Member @ Innovative Future Brain-Inspired Intelligence System Semiconductor of Sogang University.

My life goal is to help build a future where humanity thrives through the advancement of health, safety, liberty, and equality—foundational elements that pave the way to genuine happiness.

EXPERIENCE

Co-Founder & CEO - AI Technology & Biz Dev	Erudio Bio Korea, Inc.	Jul-2025 – Present
Co-Founder & CTO - AI Technology & Product Strategy	Erudio Bio, Inc.	Dec-2023 – Present
<ul style="list-style-type: none"> AI Technology, and Product Strategy to develop and productionize AI-enhanced multiplexing bio data platform 		
Advisor & Evangelist	CryptoLab, Inc.	Jan-2025 – Present
Chief Business Development Officer	WeStory.ai	Jan-2025 – Present
Leader	Silicon Valley Privacy Preserving AI Forum (K-PAI)	Oct-2024 – Present
KFAS-Salzburg Global Leadership Initiative Fellow	Salzburg Global Seminar	Aug-2024 – Present
<ul style="list-style-type: none"> Address the challenges posed by our rapidly changing world in the working group, “Technology, Growth, and Inequality: The Case of AI” under the bigger theme “for Uncertain Futures and Connections Reimagined: Connecting Technologies!” 		
Network Expert	Gerson Lehrman Gruop (GLG), New York City, U.S.A.	Feb-2022 – Present
<ul style="list-style-type: none"> Help clients solve their toughest business and technical challenges around manufacturing profit and sales improvement, e-commerce customer engagement level improvement, and AI technology in biotech industry 		
Adjunct Professor	Electronic Engineering Department, Sogang University	Mar-2020 – Present
Advisory Professor	Information and Communication Engineering, DGIST	Feb-2020 – Present
Global Advisory Board Member	Innovative Future Brain-Inspired Intelligence System Semiconductor of Sogang University	Aug-2020 – Present
<ul style="list-style-type: none"> Consult on academic direction, industry trend in Silicon Valley, social scientific / ethical / legal issues of AI & special lectures and seminars 		
Co-Founder & CTO - Senior Fellow	Gauss Labs, Inc., Palo Alto, CA. U.S.A	May-2000 – Nov-2023
VP - Fellow	SK hynix	Sep-2020 – Jun-2021
<ul style="list-style-type: none"> Drive technology innovation and business strategies & lead Gauss Labs US Headquarters in Silicon Valley 		
Senior Applied Scientist	Amazon.com, Inc., Vancouver, BC, Canada	Nov-2018 – Aug-2020
<ul style="list-style-type: none"> AI for Mobile Shopping App Main Menu Personalization system creating revenue by 200MM USD TestBot AI agents patching and updating software test scenarios 		
Principal Engineer	Software R&D Center, Samsung Electronics	Dec-2016 – Jun-2017
<ul style="list-style-type: none"> Decentralized Federated AI for Internet of Things (IoT) 		
Principal Engineer	Strategic Sales & Marketing Team, Samsung Electronics	Dec-2015 – Dec-2016
<ul style="list-style-type: none"> AI for Sales Forecasting of world-wide NAND Flash and DRAM markets 		
Principal Engineer	Design Technology Team, Samsung Electronics	Mar-2012 – Nov-2015

- AI for Optimal Scheduling System for Test & Package Factories in Suzhou, China,
- Generic AI & Optimization Platform for automatization of semiconductor design & manufacturing

Senior Engineer CAE Team, Semiconductor R&D Center, Samsung Electronics Dec-2004 – Feb-2012

- NAND Flash Memory Core Operation Optimization achieving 10% accuracy improvement
- Generic Digital/Analog/Mixed-signal Circuit Optimization
- High density DRAM failure rate estimation achieving > 100X prediction time reduction

Research Assistant EE Department, Stanford University, CA, U.S.A. Mar-1999 – Nov-2004

- Multi-objective Logic Circuits Design using Convex Optimization

Development Engineer Voyan Technology, Santa Clara, CA, U.S.A. Sep-2000 – Aug-2001

- Digital Subscriber Line (DSL) Diagnosis & Length Adjustable Transmission Line Emulator

EDUCATION

Ph.D., Electrical Engineering, Stanford University, CA, U.S.A. Sep-2001 – Nov-2004

M.S., Electrical Engineering, Stanford University, CA, U.S.A. Sep-1998 – Jun-2000

B.S., Electrical Engineering, Seoul National University, Seoul, Korea Mar-1994 – Feb-1998

HONORS AND AWARDS

- Best Invention Award at Amazon.com, Inc. 2019
- Best Paper Award at Samsung Semiconductor Technical Paper Award 2011
- Best Paper Award at Samsung Group Best Paper Award 2005
- Best Paper Award at International Symposium on Quality Electronic Design (ISQED) 2005
- Full Scholarship from Samsung Electronics 2001–2004
- Samsung Frontier Membership 1999
- Ranked 2nd in the Ph.D. Qualifying Examination, Stanford University 1999
- Full Scholarship from Korean Foundation for Advanced Study (KFAS) 1998–2000
- Graduated with Honors - Magna Cum Laude, Seoul National University (SNU) 1998
- Full Scholarship from Seoul National University (SNU) 1994–1998
- Ranked 2nd in University Entrance Examination, Seoul National University (SNU) 1994
- Graduated with Honors - Summa Cum Laude, Seoul Science High School 1993
- Bronze Medal at Asian Pacific Mathematical Olympiad (APMO) 1992
- Silver Medal at Korea Mathematical Olympiad (KMO) 1992

INVITED SEMINARS, LECTURES, AND CONSULTATIONS

- “[G-BIVA Innovation Salon] Intelligent Agents, Intelligent Medicine - AI’s Role in Next-Gen Healthcare” invited by Suwon City KSEA SV K-BioX Summit 8 23-Sep-2025 KST
- “[G-Quantum Bio Summit 2025] From Silicon Valley to Biotech Valley - AI Agents Reshaping the Future of Drug Discovery and Precision Medicine” invited by Suwon City KSEA SV K-BioX Summit 8 23-Sep-2025 KST
- “[SNU ECE Four-Departments Joint Seminar] AI Pulse Check - What Silicon Valley Is Actually Building Right Now” invited by Department of Electrical and Computer Engineering (ECE), Seoul National University (SNU) 18-Sep-2025 KST

- “[KUBS Special AI Lecture] The AI Revolution - How Smart Systems Are Reshaping Industries and Executive Decision-Making” invited by Korea University Business School 18-Sep-2025 KST
- “[POSTECH Creativity IT Seminar] The AI Landscape Decoded - Where We Are, Where We’re Going” invited by Department of Convergence IT Engineering, POSTECH 17-Sep-2025 KST
- “[2025 Middle School Gifted Education Dream Realization Camp] The Magic Behind the Machine - AI as Your Creative Partner” 12-Aug-2025 KST
- “[KAIST Medical Science and Engineering Special AI Lecture] Leading AI Innovation Across Industries - Silicon Valley Insights on Technology Transfer from Semiconductor & E-Commerce to AI-powered Biotech” invited by Graduate School of Medical Science and Engineering, Korea Advanced Institute of Science & Technology (KAIST) 03-Jul-2025 KST
- “[Institut Pasteur Korea Special AI Lecture] Silicon Valley AI Innovation - Silicon Valley Insights on Technology Transfer from Semiconductor & E-Commerce to AI-Powered Biotech” invited by Institut Pasteur Korea 02-Jul-2025 KST
- “[Yonsei University Applied Statistics AI-Biotech Seminar] The Era of Agentic AI - From Deep Learning and LLMs to Biotech Breakthroughs” invited by Department of Applied Statistics and Department of Statistics and Data Science, Yonsei University 01-Jul-2025 KST
- “[Ewha Womans University AI-Biotech Seminar] Building Tomorrow’s Healthcare - LLM, genAI, Agentic AI, and Human-Centered Innovation” invited by Division of Mechanical and Biomedical Engineering, Ewha Womans University 01-Jul-2025 KST
- “[KIST AI Policy Seminar] Cross-Industry AI Innovation - Silicon Valley’s Model for AI-Driven Technology Transfer Across Industries” invited by Korea Institute of Science & Technology (KIST) 30-Jun-2025 KST
- “[KFAS 2025 - AI & Humanity] The AI Metamorphosis - Navigating New Frontiers in Technology, Society, and Human Experience” invited by Knowledge Festival All Seasons (KFAS) 2025 27-Jun-2025 KST
- “[2025 KAIST BBE Bay Area Research Exchange] Panel Discussion on Global Biotech Innovation Ecosystem” @ Stanford University invited by Korea Advanced Institute of Science & Technology (KAIST) Bio & Brain Engineering (BBE), Korea Innovation Center (KIC), Korean Life Scientists in the Bay Area (KOLIS), and Stanford K-BioX 22-Jun-2025 PDT
- “[KASBP AI-biotech Seminar] Beyond AlphaFold - Building AI-Powered Biomarker Platforms for the Next Generation of Drug Discovery” invited by Korean American Society in Biotech and Pharmaceuticals (KASBP-SF) 04-Jun-2025 PDT
- “[KIC Silicon Valley Innovation Workshop] Silicon Valley’s Cultural Engine of Innovation and Disruption” invited by Korea Innovation Center (KIC) Silicon Valley Membership Innovation Workshop & Collaboration Networking 2025 23-May-2025 KST
- “[Korea University Business School AI Seminar] The AI Paradigm Shift - Technological Foundations, Market Dynamics, and Human Impact” invited by Korea University Business School 22-May-2025 KST
- “[Saramin Executive AI Consultation] AI Technology and Business Strategy Consultation” invited by saramin 08-May-2025 KST
- “[Sungkyunkwan University AI Seminar] AI Renaissance - New Paradigms of Knowledge, Business Innovation, and Social Architecture” invited by College of Information and Communication Engineering of Sungkyunkwan University 07-May-2025 KST
- “[SNU INMC AI Seminar] The AI Landscape: Navigating Technology, Industry Shifts, and Future Trends” invited by SNU Institute of New Media and Communications (INMC) 07-May-2025 KST
- “[Korea University AI Seminar] The AI Architecture Decoded - Orchestrating Technology and Hardware Innovation” invited by Korea University 02-May-2025 KST
- “[POSTECH AI Seminar] The AI Renaissance 2.0 - Redefining Knowledge Systems and Human-Machine Collaboration” invited by Department of Electrical Engineering of POSTECH 01-May-2025 KST

- “[Seoul Science High School AI Seminar] AI - Technology, Industry, Market, Humanities, and Your Future!” invited by Seoul Science High School 29-Apr-2025 KST
- “[Samsung Semiconductor Insight-Sharing Session] Insights from Silicon Valley - Innovation, Leadership, and AI in the Global Tech Ecosystem” invited by Foundry CMP Technology Team, Samsung Semiconductor, South Korea 05-Mar-2025 KST
- “[Samsung Semiconductor AI Seminar] AI - Technologies, Industry Transformations, Societal Impacts, and Future Trajectories with Focus on Semiconductor Manufacturing Applications” invited by Foundry CMP Technology Team, Samsung Semiconductor 05-Mar-2025 KST
- “[Samsung AI Seminar] AI - Technologies, Industry Transformations, Societal Impacts, and Future Trajectories with Focus on Semiconductor Manufacturing Applications” invited by Foundry CMP Technology Team, Samsung Semiconductor 05-Mar-2025
- “[KAIST AI Seminar] AI in Action: Biotechnology and Industrial Applications” invited by Department of Mechanical Engineering @ Korea Advanced Institute of Science and Technology (KAIST) 28-Feb-2025
- “[Sogang University BK Intelligence System Semiconductor Invited AI Seminar] The AI Metamorphosis: From Silicon Valley to Global Society - Technology, Consciousness, and Human Impact” invited by Sogang University 26-Feb-2025
- “[K-PAI Seminar] The AI Knight Rises - From Deep Learning to Flourishing Societies” invited by Silicon Valley Korea Private AI Forum 22-Jan-2025
- “[Christmas Seminar] The AI Knight Rises - From Deep Learning to Flourishing Societies” hosted by Jisun in New York 27-Dec-2024
- “[CryptoLab Lyon Research Center Seminar] AI - Technology, Industry & Hardware” invited by CryptoLab Lyon Research Center, Lyon, France 02-Dec-2024 CET
- “[KAIST AI Seminar] AI - Technology, Industry, Market & Hardware” invited by Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology (KAIST) 04-Nov-2024 KST
- “[Solidigm Executive AI Consultation] Technical & Business AI Strategy Consultation for Data Center Flash Storages” invited by Solidigm CEO 30-Oct-2024 PDT
- “[Texas A&M Seminar / Intro to Semiconductor & Microelectronics] Industrial AI - Technological Innovations and Impacts on Semiconductor Manufacturing” invited by Texas A&M University 18-Oct-2024
- “AI for Fusion Biweekly Seminar: Industrial AI & Biotechnology - Technology, Market, and Future” invited by EnableFusion 08-Aug-2024
- “Applied Statistics Invited Seminar LLM & genAI - Technology, Industry, and Market” invited by Yonsei University 10-Jul-2024
- “Samsung Flash Design Team Invited Seminar - Industrial AI & its applications in manufacturing” invited by Samsung Semiconductor 27-Jun-2024
- “SNU CSE Invited Seminar - LLM & genAI - Technology, Industry, and Some Important Questions” invited by Seoul National University (SNU) 25-Jun-2024
- “BK Intelligence System Semiconductor Invited Seminar - LLM & genAI - Technology, Industry, and Some Important Questions” invited by Sogang University 24-Jun-2024
- “2024 LINC 3.0 + GSAI Joint Seminar - Industrial AI - Best Practices in Semiconductor Manufacturing” invited by Pohang University of Science and Technology (POSTECH) 19-Jun-2024
- “SAIT AIRC Seminar: LLM & genAI - Technology, Business, and AI Markets” invited by Samsung Advanced Institute of Technology (SAIT) 24-Apr-2024
- “DGIST Seminar: LLM & genAI - Technology, Business, and AI Markets” invited by EE Department of Daegu Gyeongbuk Institute of Science and Technology (DGIST) 06-Feb-2024
- “Cryptography Seminar: Industrial AI Technology in Manufacturing” invited by SNU Mathematics Department 02-Feb-2024

- “SNU Data Science (DS) Seminar: Industrial AI Technology” invited by Seoul National University (SNU) Data Science (DS) Graduate School 01-Nov-2023
- “Time-series Learning and Software Platform for Manufacturing AI” invited by EE Department of Daegu Gyeongbuk Institute of Science & Technology (DGIST) 23-Jun-2022
- “BK4 Seminar: Manufacturing AI Problems and Solutions” invited by Sogang University 13-Jun-2022
- “EE/CS Seminar: Manufacturing AI Problems and Solutions” invited by SNU EE/CS Departments 13-Jun-2022
- “Time-series Machine Learning in Manufacturing” invited by POSTECH 08-Apr-2022
- “AI Frontier Summit: AI in Manufacturing and Industry Areas” invited by Korean Institute of Communications and Information Sciences (KICS) Conference 2021
- “Special Lecture: Electrical Engineer in the age of AI” invited by Sogang University 26-Mar-2021
- “Future Creation Seminar: The Future of AI” invited by Amorepacific 20-Oct-2020
- “Introduction to AI and Machine Learning” invited by Consulate General of Republic of Korea @ Vancouver 17-May-2019
- “Reinforcement Learning and its Applications” invited by University of British Columbia (UBC) Sauder School of Business 26-Apr-2019
- “Convex Optimization for Machine Learning (ML)” invited by SNU EE Department 22-Aug-2018
- “Convex Optimization for Artificial Intelligence (AI)” invited by Amazon Machine Learning (ML) Meetings 02-Feb-2018
- “KCC Tutorial: Convex Optimization for Decentralized Machine Learning” invited by Korea Computer Congress (KCC) 2017 18-Jun-2017
- “Convex Optimization for Machine Learning” invited by Samsung Semiconductor DRAM Development Lab 2017
- “Convex Optimization for Machine Learning” invited by EE Department of Daegu Gyeongbuk Institute of Science & Technology (DGIST) 2017
- “Convex Optimization for Machine Learning” invited by EE Department of Ulsan National Institute of Science & Technology (UNIST) 2017
- “Introduction to Convex Optimization and its Applications” invited by Kyung Hee University 2013
- “Convex Optimization and its Applications” invited by Seoul National University (SNU) 2008
- “Circuit Design via Geometric Programming” invited by Seoul National University (SNU) 2005
- “Convex Optimization and its Application in Circuit Design” invited by Samsung Semiconductor Memroy Business Computer-aided Engineering (CAE) Team 2002

PUBLICATIONS

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- Sangyoun Lee, Juho Jung, Changdae Oh, and Sunghee Yun. “Enhancing Temporal Action Localization: Advanced S6 Modeling with Recurrent Mechanism”, <https://arxiv.org/abs/2407.13078>, 2024
 - S. Zabrocki, P. Jo, C. Park, D. Yim, S. Yun, and B. Lee. “Adaptive Online Time-Series Prediction for Virtual Metrology in Semiconductor Manufacturing”, 34th Annual SEMI Advanced Semiconductor Manufacturing Conference (ASMC), May 2023
 - M. Karpusha, S. Yun, and I. Fehervari. “Calibrated neighborhood aware confidence measure for deep metric learning”, (<https://arxiv.org/abs/2006.04935>), June 2020
 - J. Lee, S. Yun, J. Kim, D. Kang, J. Kim, and S. Lee. “Multiple shift-vector importance sampling method using support vector machine and clustering for high-density DRAM designs”, 17th International Symposium on Quality Electronic Design (ISQED), pp. 430–436, March 2016
 - J. Jeon, I.H. Park, M. Kang, W. Hahn, K. Choi, S. Yun, G. Yang, K. Lee, Y. Park, and C. Chung. “Accurate compact modeling for sub-20-nm NAND Flash cell array simulation using the PSP model”, IEEE Transactions on Electron Devices, Vol. 59, No. 12, pp. 3503–3509, December 2012

- S. Yun, I.H. Park, N.H. Lee, and J.K. Jeong. “New design methodology for efficient NAND Flash development using multiobjective evolutionary algorithm”, Samsung Semiconductor Technical Paper Award, August 2011 (Best Paper Award)
- S.-J. Kim, S. Boyd, S. Yun, D. Patil, and M. Horowitz. “A heuristic for optimizing stochastic activity networks with applications to statistical digital circuit sizing”, Optimization and Engineering, Vol. 8, No. 4, pp. 397–430, December 2007
- S. Yun, D.H. Kim, and S.H. Jung. “Statistical parameter estimation methodology for statistical circuit analysis”, Samsung Group Paper Award, November 2005 (Best Paper Award)
- D. Patil, S. Yun, S.-J. Kim, A. Cheung, M. Horowitz, and S. Boyd. “A new method for design of robust digital circuits”, 6th International Symposium on Quality Electronic Design (ISQED), San Jose, pp. 676–681, March 2005 (Best Paper Award)
- S. Boyd, L. Vandenberghe, A. El Gamal, and S. Yun. “Design of robust global power and ground networks”, Proceedings ACM/SIGDA Symposium on Physical Design (ISPD), pp. 60–65, April 2001

PATENTS

- Systems and Methods for Process Monitoring and Control 2024
- Testbot AI agent: automatic software test scenario patch and modification system 2020
- Method of testing semiconductor memory device, test device, and computer readable recording medium for recording test program for semiconductor memory device 2017
- Method and system for designing 3D semiconductor package 2014
- Methodology for estimating statistical distribution characteristics of physical parameters of semiconductor device 2009
- Methodology for estimating statistical distribution characteristics of product parameters 2007
- Length adjustable transmission line emulators with simple RLC circuits 2001

TEACHING EXPERIENCE

- Amazon Lecturer** Machine Learning University, Amazon 2018–2020
 - AI Mathematical Fundamentals, AI Data Science, Advanced Machine Learning Courses
- Samsung Electronics Lecturer** Samsung Electronics 2005–2017
 - Convex Optimization for AI, Machine Learning & AI
 - Numerical Linear Algebra for ML, Advanced Statistics
- Teaching Assistant** Stanford University 1999–2002
 - Linear Dynamical Systems, Convex Optimization