

Seth Han

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Education

Dartmouth College , Hanover, NH, USA	2025 – 2029
Bachelor of Arts in Engineering Sciences and Music (GPA: 4.0/4.0)	
Cheongshim International Academy , Gyeonggi, South Korea	2022 – 2025
High School Diploma (GPA: 5.0/5.0 Unweighted)	

Research Experience

- **Undergraduate Researcher**, CREATE Lab at Dartmouth College 2026 –
Machine learning for robust state estimation of virtual power plant under cyber attacks
(Advisors: Prof. Junbo Zhao[†][¶], Dr. Alaa Selim[†] & Mr. Yingrui Fan[†])
- **Independent Researcher**, School of Arts & Sciences at Dartmouth College 2025 –
Topology-aware weakly-supervised semantic segmentation (WSSS) for anomaly detection for manufacturing
(Co-first author: Mr. Seungjun Chu[‡])
- **Research Scientist**, Drice 2022 – 2025
Drone-based black ice detection and mapping using YOLOX
(Advisors: Dr. Hyunwook Chung[§] & Mr. Donghwan Shin[§])
- **Student Researcher**, Cheongshim International Academy 2024 – 2025
Gait-recognition based missing person identification from CCTV footage
(Advisor: Mr. Donghwan Shin[§])
- **Student Researcher**, Cheongshim International Academy 2021 – 2022
Heavy metal absorption using used mushroom compost
(Advisor: Dr. Hyunchang Hong^{*})

[†]Thayer School of Engineering, Dartmouth College, Hanover, NH

[¶]DOE Northeast University Cybersecurity Center for Advanced and Resilient Energy Delivery, Storrs, CT

[‡]College of Engineering, Korea University, Seoul, South Korea

[§]Department of Mathematics, Cheongshim International Academy, Gyeonggi, South Korea

^{*}Department of Science, Cheongshim International Academy, Gyeonggi, South Korea

Professional Experience

- **Co-Founder & CIO**, Drice 2022 – 2025
Developed and patented an AI-powered drone system that detects black ice in real-time. Secured \$11K+ in R&D funding from the Ministry of Science of Korea, Ministry of Education of Korea, POSCO DX, etc.
- **Data Analyst Intern (CTO Staff)**, Enuma, Inc. 2025 – 2025
Analyzed user log from B2G edtech products in global markets using SQL and Python.
- **Co-Founder & CSO**, Justiz 2023 – 2024
Built a language analysis platform to detect malicious comments and help influencers pursue legal action or data-driven business decisions. Secured \$11K+ in R&D funding from the Ministry of Science of Korea.
- **Research Assistant Intern (CEO Staff)**, Enuma, Inc. 2024 – 2024
Researched edtech industry trends to enhance educational games for slow learners, presenting findings biweekly to the CEO and the CPO. Assisted in developing government-certified digital English and Mathematics textbooks in South Korea.

Journal Papers

- J. OH[†], J. Moon[†], S. HAN[†], and D. SHIN, “Real-Time Black Ice Detection in Drone View Using YOLOX”, *J Stud Res*, vol. 13, no. 2, May 2024. DOI: 10.47611/jsrhs.v13i2.6831
([†]Co-first authors)

Patents

- J. Oh, H. Lee, S. Moon, and S. Han, ”Black Ice Identification and Warning System and Method Using Unmanned Aerial Vehicles,” KR Patent 10-2681032, Jul. 04, 2024.

Selected Scholarships & Awards

Scholarships

- Presidential Science Scholarship of South Korea 2025 – 2029
(merit-based \$50,000/year scholarship for 20 students nationwide)
- James and Agnes Kim Family Scholarship 2025 – 2026
(Dartmouth Honorary Paired Scholarship)

Awards

- Finalist & National Rep., Regeneron International Science & Engineering Fair (ISEF) 2024
- Minister of Science Award & Provincial Rep., National Science Contest in Engineering 2024

- Deputy Prime Minister/Minister of Education Award, STEAM R&E in Engineering 2024
- 1st Place, Korea Science & Engineering Fair (KSEF) in Computer Science 2024
- 3rd Place, POSCO DX AI Youth Challenge 2024
- 1st Place, Gyeonggi Science Contest in Engineering 2024
- School Merit Award: Experiment & Research 2024
- School Merit Award: Giftedness in Science 2024
- 2nd Place, Korea Science & Engineering Fair (KSEF) in Computer Science 2023
- 1st Place & National Rep., Youth International Science Fair (YISF) in Env. Sci. 2022
- Deputy Prime Minister/Minister of Education Award, STEAM R&E in Engineering 2022
- 2nd Place, Korea Science & Engineering Fair (KSEF) in Env. Sci. 2022
- 2nd Place & Provincial Rep., Korea Youth Startup Competition 2022
- Finalist & Innovation Award, Promising Student Start-up Team 300+ 2022
- School Merit Award: Giftedness in Science 2022
- 2nd Place, Youth Science Club (YSC) in Env. Sci. 2021

Selected Activities and Engagements

- **Executive Board Member**, DartUP Dartmouth 2025 –
Organized Dartmouth's Social Blueprint Challenge (SBC, Hult Prize campus round). Designed and led a social entrepreneurship curriculum for SBC participants & 30+ associate members.
- **Magnuson First Year Fellow**, Magnuson Center for Entrepreneurship 2025 –
Selected as 1 of 15 for entrepreneurship and leadership training. Mentored by the Magnuson Student Leadership Board and Entrepreneurial Thinking & Leadership Fellows.
- **Great Issues Scholar in Residence**, Dickey Center for Int'l Understanding 2025 –
Participated in a year-long series of interactive events around topics like global health, climate change, gender in politics, international development, and regional security challenges.
- **Film Producer & Editor**, Independent 2019 – 2025
Participated in 10+ individual film and commercial video projects. Most recent work *Yellow Ghost* made it onto the selection list of the Busan International Film Festival (BIFF) 2025.