

Chaewon Baek

Curriculum Vitae

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RESEARCH INTERESTS

Design and Control of Origami-inspired Mechanism
Bio-inspired Mechanism
3D Printing

EDUCATION

Seoul National University	Seoul, Republic of Korea
B.S., Mechanical Engineering	<i>Feb. 2019 - Present</i>
B.S., Electrical and Computer Engineering	<i>Aug. 2020 - Present</i>
• Current GPA: 3.86/4.3, Major GPA: 4.11/4.3	
* <i>2021-2023: Mandatory Military Service (ROK Army)</i>	
Daegu Science High School(DSHS)	Daegu, Republic of Korea
High School Diploma	<i>Mar. 2016 - Feb. 2019</i>

RESEARCH EXPERIENCE

Japan Aerospace Exploration Agency(JAXA)	Sagamihara Campus, Japan
• Institute of Space and Astronautical Science(ISAS)	
– Student Practical Training System(Advisor: Prof. Hiromi Yasuda)	<i>Aug. 2024</i>
• Learned numerical analysis techniques to model and analyze origami-based deployable structures	
• Held a presentation on size dependent behaviors of Miura-Ori based structures	
• Attended Symposium: Origami Bridging Art, Science & Industry 2024 (Supported by Japan Origami Academic Society, Art Center, the University of Tokyo)	
Seoul National University	Seoul, Republic of Korea
• Transformative Architecture Laboratory	
– Undergraduate Researcher(Advisor: Prof. Jinkyu Yang)	<i>Sep. 2023 - Present</i>
• Designed, fabricated and analyzed a robot leg with bistable features inspired by origami Leaf-out structure	
• Analyzed the directional stiffness and poisson's ratio of Miura-Ori structure (Supported by Seoul Nat'l Univ Student-Directed Education Undergraduate Research Program through the Faculty of Education, Received 5000\$)	
• Biorobotics Laboratory	
– Undergraduate Researcher(Advisor: Prof. Kyu-Jin Cho)	<i>Dec. 2020 - Sep. 2021</i>
• Designed and fabricated a control mechanism of origami flasher model for drone perching and climbing mechanism	
• Developed a compact wall-climbing platform using rotary microspine structure and suction cup	

PUBLICATIONS

(In preparation)

C. Baek, H. Yasuda, and J. Yang, "Size Dependent Behaviors of Miura-Ori Structure", (Targeting *Physical Review Letters*, *Nature Communications*).

TEACHING EXPERIENCE

Seoul National University

Seoul, Republic of Korea

- 2024 Physics Self-Paced Learning & Tutoring for Freshmen Course Mentor
 - Innovation Center for Engineering Education of Seoul Nat'l Univ. *Dec. 2023 - Feb. 2024*
- Undergraduate Course Assistant
 - M2794.001300 Fluid Mechanics *Sep. 2023 - Dec. 2023*

OTHER EXPERIENCES

Seoul National University

Seoul, Republic of Korea

- Seoul National University Formula SAE Team
 - Seoul National University Formula SAE Powertrain Team Leader *Aug. 2020 - Sep. 2021*
 - Designed, constructed the team's first Formula racecar's overall powertrain system from scratch
 - Held seminar on Finite Element Analysis and Topology optimization using Solidworks
 - Made a program that optimizes differential gear & turnbuckle system to minimize the chain tension and the load to individual parts using Matlab
- Seoul National University Baja SAE Team
 - Seoul National University Baja SAE Team Member *Mar. 2019 - Jul. 2020*
 - Participated in the construction of the Baja Racecar as a team member

National Academy of Engineering of Korea

Seoul, Republic of Korea

- Young Engineers Honor Society (YEHS)
 - Young Engineers Honor Society 2024 Member *Jan. 2024 - Present*
 - Attended the 271st NAEK Forum on Jan. 22, 2024 as a member of the YEHS, National Academy of Engineering of Korea

TECHNICAL SKILLS

Programming: Python, C, C++, Matlab, \LaTeX

CAD/Simulation: Fusion360, Solidworks, Autocad, Altair, KiCAD, LTSpice, Paraview

Languages: English(Fluent, TOEIC: 990, TOEFL: 109), Korean(Native)

AWARDS

Grand Prize, Mechatronics class, Seoul National University, 2023

Creativity Award, Creative Engineering Design class, Seoul National University, 2019

SCHOLARSHIPS

Semiconductor Scholarship, Seoul National University, 2024

Sinyang Cultural Foundation Scholarship, Sinyang Cultural Foundation, 2024

Merit-based Scholarship, Seoul National University, 2020, 2021, 2023

Local Talent Scholarship, Kimcheon Human Resources Development Foundation, 2021