Suyeon Jeong

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Education

Seoul National University (SNU) — Seoul, Republic of Korea
B.S. in Mechanical Engineering — Mar 2020 - Feb 2025

- Full Scholarship Recipient, GPA: 3.91/4.00 (overall) | 4.15/4.30 (major)
- Completed specialized track in **Biomechanics & Biosystems, Robotics**

University of California, San Diego (UCSD) — San Diego, CA
Exchange Program in Mechanical Engineering, GPA: 4.0/4.0 — Sep 2023 - Dec 2023

Incheon Academy of Science & Arts — Incheon, Republic of Korea
High school for gifted students in Science, Specialized in Physics — Mar 2017 - Feb 2020

Research Interest

Exploring the mechanics of materials and structures to advance soft machines and robots

- **Soft Material, Nonlinear Mechanics, Control Theory, Soft Robotics, Biomechanical Systems**

Research Experience

Research Intern at SNU
SNU Transformative Architecture Lab (PI: Jinkyu Yang) — Jan 2024 - Present

- Real-time Nonlinear Mechanical Modeling and Dynamic Analysis of Non-rigid Origami Structures
- Optimal Control Strategy for Origami-inspired Robots via Gramian-based Actuator and Sensor Placement
- Received a $10,000 research grant; scheduled poster presentation for Dec. 2023

Undergraduate Researcher at UCSD
Bioinspired Robotics and Design Lab (PI: Michael T. Tolley) — Sep 2023 - Dec 2023

- Bio-inspired Under-actuated Soft Ribbon Fin Robot: Implementation of Amiiform Locomotion Principles
- Koopman Operator-based Reduced-order Modeling for Soft Material Dynamics and Control Systems

Undergraduate Researcher (UROP) at SNU
Biorobotics Lab (PI: Kyujin Cho) — Jan 2023 - Oct 2023 & Jun 2024 - Aug 2024

- Computational Analysis and Fabrication of Novel Origami-Based Compliant Mechanism
- Design and Experimental Validation of a Yoshimura Tessellation-based Self-Deploying Helmet

Research Intern at SNU
Microfluids & Soft Matter Lab (PI: Hoyoung Kim) — Dec 2021 - Mar 2022

- Development and Analysis of Emergent Collective Behaviors in Reconfigurable Robotic Swarm Systems

Publications and Conferences

[1] K. Yamaguchi, Y. Miyazawa, Y. Oh, **S. Jeong**, R. Dai*, M. Mesbahi*, J. Yang*, "Controllability analysis of origami dynamics via state-space modeling", *Ready for submission*

[2] **S. Jeong**, I. Kang, H. Seo, S. Yoon, B. Park, "Application of the Kubelka-Munk Theory to Study the Influence of Iron Oxides in Kaolin," 2018 Geological Society of Korea Annual Conference, October 2018, Poster Presentation.

VENTURE DEVELOPMENT

Solive Ventures : Home-based Child Developmental Care Solutions Dec 2022 - Sep 2023
Researcher, Co-founder

- Developed an *AI-driven soft haptic device* for ASD children, awarded the CES 2024 Innovation Award
- Mainly led research with Prof. HyeJun Park's Child Development Lab and ASD clinical experts
- Drove early-stage development, secured seed funding and competitive government package (MSS) grant

HONORS & AWARDS

Presidential Science Scholarship $44,000, Ministry of Science and ICT (MSICT) Mar 2020-Present

- Recognized as one of the top 120 STEM students in Korea, awarded in the field of *Physics*

Intellectual Global Leader Scholarship $17,500, Korea Foundation for Advanced Studies Jan 2023

- Selected as one of 30 young innovative leaders in Korea, awarded a research grant and stipend

SNU Gwanak Foundation Scholarship $5,000, SNU Mar 2022

- Recognized as one of the top two outstanding B.S. students in Mechanical Engineering at SNU

Grand Prize - Creative Engineering Design Fair $3,000, SNU College of Engineering Oct 2023

- Led team to 1st place in SNU's top engineering competition, earning invitation to MWC Barcelona 2024

Grand Prize - National Contest in ICT Smart Device $3,000, MSICT Aug 2023

Study Abroad Program Scholarship $5,000, Office of International Affairs, SNU Sep 2023

LEADERSHIP & REPRESENTATION

President - SNU Engineering Honor Society, under the Dean of Engineering Jan 2023 - Sep 2023

- Represented the *top-performing engineering student society*, 300 selected students over a 15-year legacy
- Invited to 5+ lectures as a speaker on engineering-related topics at academic seminars and a public talk event
- Organize mentorship programs with Gwanak District Office, guiding over 300 prospective engineers

Vice President - Student Council, Mechanical Engineering, SNU Nov 2021 - Nov 2022

- Elected as the representative of over 500 mechanical engineering undergraduates; led multiple student events

TEACHING

Solid Mechanics (M2794.001000) Undergraduate Course Assistant Spring 2022

- Led bi-weekly, 2-hour problem-solving sessions for 3 students in lectures by Prof. Yoon Young Kim

Fluid Mechanics & Dynamics Undergraduate Tutor Fall 2021

- Provided specialized note-taking and mentoring for a student with hearing impairments

Calculus I Undergraduate Tutor Winter 2022

SKILLS

- **Modeling & Simulation:** MATLAB/Simulink, Abaqus, Python, OpenCV, Paraview, KiCAD, LTspice
- **Design & Manufacturing:** 3D CAD, PCB Design, Extensive experience with soft material manufacturing
- **Relevant Coursework**: Solid Mechanics, Mechanics and Design, Materials and Manufacturing, Mechanobiology, Modeling and Control of Biological Systems, Introduction to Robotics, Control Systems (graduate), Nonlinear System Theory (graduate), Wave Dynamics in Elastic Solid (graduate)