Jaemin Eom – Curriculum Vitae

Biorobotics Laboratory / Soft Robotics Research Center
Department of Mechanical Engineering
Seoul National University
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Research Interests

- Robotic Grippers
- Soft Robots
- Bio-inspired Robots
- Soft Morphing Structures

Education

Sep. 2017 - Current **Ph.D. and M.S. Integrated Course, Mechanical Engineering** (GPA : 3.77/4.3)
Seoul National University, Seoul, Korea
Advisor: Prof. Kyu-Jin Cho

Mar. 2013 - Aug. 2017 **Bachelor in Mechanical engineering** (GPA : 3.92/4.3)
Seoul National University, Seoul, Korea

Research Experience

Jan. 2018 - Dec. 2020 **Development of modular gripper for small quantity production process**
Funded by *Korea Institute of Machinery & Materials*
- Principal investigator of research project
- Controlled the developed soft gripper using ROS communication
- Developed a customized soft gripper with task specific designs

Sep. 2017 - May 2020 **Development of fundamental technology of soft robotics for advanced soft grippers**
Funded by *Ministry of Trade, Industry & Energy*
- Principal investigator of research project
- Developed pneumatically actuated soft gripper for various objects, especially e-commerce
- Controlled the developed soft gripper using ROS communication
- Benchmarked the Amazon Picking Challenge to analyze feasibility of gripper

Jan. 2020 – Dec. 2022 **Development of a collaborative assistive robot arm utilizing foldable soft robot technology**
Funded by *Ministry of Trade, Industry & Energy*
- Integrated the developed foldable gripper and the developed robotic arm

PUBLICATIONS

International Journal, 3 Paper (First author: 1 Paper, Second author: 2 Papers)

1. Yuna Yoo, **Jaemin Eom**, MinJo Park, and Kyu-Jin Cho, "Compliant Suction Gripper with Seamless Deployment and Retraction for Robust Picking against Depth and Tilt Errors," IEEE Robotics and Automation Letters, vol.8, no.3, 2023. (Co-first author)
2. Jun-Young Lee, **Jaemin Eom**, Sung Yol Yu, and Kyu-Jin Cho, “Customization Methodology for Conformable Grasping Posture of Soft Grippers by Stiffness Patterning,” Front. Robot. AI, vol. 7, 2020, doi: 10.3389/frobt.2020.00114.
3. Woongbae Kim, **Jaemin Eom**, and Kyu-Jin Cho†, "A Dual-Origami Design that Enables the Quasisequential Deployment and Bending Motion of Soft Robots and Grippers," Advanced Intelligent Systems, vol. 4, no. 3, 2021.

Journals in Preparation, 1 Papers (First author: 1 paper)

4. **Jaemin Eom**, Sung Yol Yu, Woongbae Kim and Kyu-Jin Cho, "Multi-Object Gripper with Individual Object Handling Capabilities," in preparation

International Conferences, 2 Papers (First author: 1 paper, Second author: 1 paper)

5. Jun-Young Lee, **Jaemin Eom**, Woo-Young Choi and Kyu-Jin Cho, "Soft LEGO: Bottom-up Design Platform for Soft Robotics," *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2018, pp. 7513-7520, doi: 10.1109/IROS.2018.8593546.
6. **Jaemin Eom**, Woo-Young Choi, Woongbae Kim, Jae-Ryeong Choi and Kyu-Jin Cho, "Design Methodologies for Tendon Driven Soft Gripper," *2018 Emerging Technologies in Mechanical Engineering (ETME 2018)*, 2018.

Patents (Registered: 3 patents)

7. Jun-Young Lee, **Jaemin Eom**, and Kyu-Jin Cho, "Soft Block Unit Comprising Expanding Block and Bending Block," **JP Patent** 6620257 issued Nov. 22th, 2019. (Application Serial Number 2019-082506 filed on Apr. 24th, 2019).
8. Jun-Young Lee, **Jaemin Eom**, and Kyu-Jin Cho, "Soft Block Unit Comprising Expanding Block and Bending Block," KR Patent 101950654 issued Apr. 14th, 2019. (Application Serial Number 10-2018-0167641 filed on Dec. 21th, 2018).
9. **Jaemin Eom**, Sung Yol Yu, Woongbae Kim and Kyu-Jin Cho, "Multi-Object Gripper with Internal Storage," KR Patent 2497956 issued Feb. 6th, 2023. (Application Serial Number 10-2021-0165436 filed on Nov. 26th, 2021).

Honor and Awards

Apr. 2021	1st prize winner, RoboSoft 2021 Manipulation Challenge, IEEE International Conference on Soft Robotics
Nov. 2020	Silver Prize, 5th KSME-SEMES Open Innovation Challenge, Young Engineers Group
Dec. 2019	Silver Prize, 4th KSME-SEMES Open Innovation Challenge, Young Engineers Group
Apr. 2019	3rd prize winner, RoboSoft 2019 Manipulation Challenge, IEEE International Conference on Soft Robotics
Feb. 2019	Bronze Prize, 25th SAMSUNG Humantech Paper Award

Teaching Experience

Teaching Assistant	**Dynamics (M2794.001200)**
(Sep. 2019 - Dec. 2019)	Seoul National University
	Supervisor : Prof. Kyu-Jin Cho
Teaching Assistant	**Management in Mechanical Engineering 1 (M2794.004500)**
(Mar. 2018 - Jun. 2018)	Seoul National University
	Supervisor : Prof. Young-sang Yoo