

# Shoma Tanaka

## Curriculum Vitae

Department of Mechanical Engineering

Institute of Science Tokyo

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## Education

- 2024–present **PhD, Engineering**, Department of Mechanical Engineering, Institute of Science Tokyo.
- 2023–2024 : **Master of Engineering**, Department of Mechanical Engineering, Tokyo Institute of Technology.
- 2019–2023 : **Bachelor of Engineering**, Department of Mechanical Engineering, Tokyo Institute of Technology.

## Research Experience

### Institute of Science Tokyo, Japan

- Oct.,2024 – **Realizing autonomy and functionality in physical machines.**  
present by harnessing mechanical and fluidic nonlinearities as well as material functionalities
- Advisor : **Dr. Hiroyuki Nabae**, Associate Professor, Department of Mechanical Engineering, Institute of Science Tokyo ([Personal Web-page](#))
- Tokyo Institute of Technology, Japan**
- Apr.,2022 – **Reproducing the remarkable motions observed in living organisms.**  
Sep.,2024 by exploring their underlying structural principles
- Advisor : **Dr. Koichi Suzumori**, Professor, Department of Mechanical Engineering, Institute of Science Tokyo ([Personal Web-page](#))

## Publications

### Journal Articles

- 2025 Sota Suzuki, **Shoma Tanaka**, Hiroyuki Nabae, and Shingo Maeda. Mckibben artificial muscle embedded with stretchable textile sensor. *Advanced Intelligent Systems*, volume 7, page e202500356. Wiley Online Library, 2025.
- 2025 Ryota Kobayashi, **Shoma Tanaka**, Hiroyuki Nabae, Gen Endo, and Koichi Suzumori. Mckibben muscle with elastic thread embedded in parallel extending range of motion of muscle-driven robots. *IEEE Robotics and Automation Letters*. IEEE, 2025.
- 2025 Hana Ito, **Shoma Tanaka**, Yunhao Feng, Hiroyuki Nabae, Yasuji Harada, Akira Fukuwara, and Koichi Suzumori. A canine musculoskeletal robot for investigating biomechanical functions during locomotion. *Advanced Robotics Research*, page e202500170. Wiley Online Library, 2025.
- 2024 **Shoma Tanaka**, Hiroyuki Nabae, and Koichi Suzumori. Serially coupled self-excited pneumatic actuator for environment-adaptive steering robot. *IEEE Robotics and Automation Letters*. IEEE, 2024.
- 2023 **Shoma Tanaka**, Hiroyuki Nabae, and Koichi Suzumori. Back-stretchable mckibben muscles: Expanding the range of antagonistic muscle driven joints. *IEEE Robotics and Automation Letters*, volume 8, pages 5331–5337. IEEE, 2023.

## In Conference Proceedings

- 2025 **Shoma Tanaka**, Ryota Kobayashi, Hiroyuki Nabae, and Koichi Suzumori. Time-lag generation mechanical valve for enhancing time response of back-stretchable mckibben muscles. In *2025 IEEE/SICE International Symposium on System Integration (SII)*, pages 679–683. IEEE, 2025.
- 2024 **Shoma Tanaka**, Hiroyuki Nabae, and Koichi Suzumori. Dynamic characteristics of back-stretchable mckibben muscles. In *Proceedings of Jc-IFToMM International Symposium Vol. 7 (2024)*, pages 211–213. Japanese Council of IFToMM, 2024.
- 2024 **Shoma Tanaka**, Ryota Kobayashi, Hiroyuki Nabae, and Koichi Suzumori. Fiber jamming mechanism for back-stretchable mckibben muscles. In *2024 IEEE/SICE International Symposium on System Integration (SII)*, pages 48–53. IEEE, 2024.

## Awards

- 2025 Research Encouragement Award, The Robotics Society of Japan (RSJ)
- 2025 SICE International Young Authors Award for SII2025, The 2025 IEEE/SICE International Symposium on System Integration (SII2025)
- 2024 Excellent Presentation Award, Interim Master's Thesis Presentation Session (Mechanical Course), Tokyo Institute of Technology, FY2023
- 2024 Best Soft Robotic Paper Award, The 2024 IEEE/SICE International Symposium on System Integration (SII2024)

## Research fundings and Scholarship

- 2025–2028 Research Fellowship for Young Scientists DC1, Japan Society for the Promotion of Science (JSPS)
- 2024–2027 JST ACT-X Program, Japan Science and Technology Agency (JST)
- 2024–2025 Tsubame Doctoral Student Scholarship, Institute of Science Tokyo
- 2023–2024 Takano Academic Foundation Scholarship (selected as a 2023 scholar), Takano Academic Foundation
- 2023–2024 JASSO Scholarship (full exemption for outstanding performance ), Japan Student Services Organization

## Academic Achievements & Recognitions

- 2025 Miura Award, The Japan Society of Mechanical Engineers (JSME)
- 2021 Overall 2nd Place, 1st ACTS Competition
- 2021 UNISEC Award, 1st ACTS Competition
- 2021 2nd Place, Technical System Award, 1st ACTS Competition
- 2020 Outstanding Student Award, Hakuseikai (33rd), Tokyo Institute of Technology