RYO KANNO

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Ryo Kanno

EXPERTISE

- Soft Robotics
- Human-Machine Interface Devices
- Sustainable & Eco-Friendly Robotics
- Additive Manufacturing
- Mechanical & Electrical Analysis of Smart Materials

EXPERIENCE

Doctoral fellow at the Laboratory of Sustainability Robotics — Zurich/Lausanne, Switzerland
Swiss Federal Institutes of Technology (Empa/EPFL) — June 2023-present
- Advisors: Prof. Mirko Kovac, Prof. Jamie Paik
- Magnetic underwater soft robots, Biocompatible ionic polymer actuators

Student Teaching Assistant — Lausanne, Switzerland
EPFL — February 2025- May 2025
- Instructed soft robotics and soft devices for human-machine interface operating in-air, underwater environments

Visiting Researcher — Lausanne, Switzerland
EPFL — March 2023- February 2024
- Developed underwater hydraulic soft actuators with fully edible materials

Robotics Association Member — Tokyo, Japan
The University of Electro-Communications — April 2017 - March 2021
- Aimed to participate ABU Robocon, an international university robotics competition: responsible for electronics and motion control of shuttlecock throwing robot
- Developed a flyback robot in CanSat competition at space center: responsible for hardware development and electronics

EDUCATION

The University of Electro-Communications — Tokyo, Japan
M.Eng. in Mechanical Engineering and Intelligent Systems — 2021-2023
- Biodegradable electrohydraulic soft actuators
- McKibben artificial muscles with dielectric elastomer sensor

The University of Electro-Communications — Tokyo, Japan
B.Eng. in Mechanical Engineering and Control Systems — 2017-2021
- Multifunctional electrostatic wearable soft devices
- Fluidic soft actuators with strain/proximity sensor

SKILLS

- Programming and Software:
  Python, MATLAB (<5 years)
  C++ (5+ years)
  VISA protocol, SolidWorks, Inventor, Fusion360 (5+ years)
- Hardware:
  3D printing, Custom PCB development, Metalworking, Robotic system integration, High voltage system, Pneumatic/Hydraulic circuit (5+ years)
- Soft robotic skills:
  Direct ink writing, Fluidic/Electrostatic soft Dielectric elastomer transducers (5+ years)

LANGUAGES

- English: fluent
- Japanese: mother tongue

SELECTED PUBLICATIONS (FULL LIST CAN BE FOUND HERE)

[1] **R**. **Kanno**, F. Caruso, K. Takai, Y. Piskarev, V. Cacucciolo, and J. Shintake, "Biodegradable electrohydraulic soft actuators", Advanced Intelligent Systems, 2023,

[2] **R**. **Kanno**, P. H. Nguyen, J. Pinskier, D. Howard, S. Song, and M. Kovac, "Hybrid Soft Electrostatic Metamaterial Gripper for Multi-surface, Multi-object Adaptation", IEEE 7th International Conference on Soft Robotics (RoboSoft), 2024,

[3] N. Trümpler*, **R. Kanno***, N. David, A. Huch, P. H. Nguyen, M. Jurinovs, and M. Kovac, "Low-Cost 3D printed, Biocompatible Ionic Polymer Membranes for Soft Actuators", IEEE 8th International Conference on Soft Robotics (RoboSoft) 2025,

[4] **R. Kanno**, B. Kwak, M. Pankhurst, J. Shintake, and D. Floreano, "Edible soft actuators based on konjac glucomannan for underwater operation", Advanced Intelligent Systems, 2024,

[5] **R. Kanno,** K. Shimizu, K. Murakami, Y. Shibahara, N. Ogawa, H. Akai, and J. Shintake, "Silicone-based highly stretchable multifunctional fiber pumps", Nature Scientific Reports, 2024,

[6] **R. Kanno**, S. Watanabe, K. Shimizu, and J. Shintake, "Self-sensing McKibben artificial muscles embedded with dielectric elastomer sensor", IEEE Robotics and Automation Letters, 2021,

[7] **R. Kanno**, S. Watanabe, K. Shimizu, and J. Shintake, "Pneumatic artificial muscles embedded with dielectric elastomer sensor", Electroactive Polymer Actuators and Devices (EAPAD) XXIII, 2021.

AWARDS & MISCELLANEOUS

- Spotlight Paper at Robosoft, 2025
- Best Paper Finalist at Excellence in Manufacturing Reproducibility at RoboSoft, 2024
- Student Award at The University of Electro-Communications, 2022 and 2023