

Daichi Kusumoto

Ph.D. Application Curriculum Vitae

Graduate School of Design, Kyushu University | Fukuoka, Japan

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Education

Graduate School of Design, Kyushu University [\[Link\]](#)

Fukuoka, Japan

Master of Design

Oct 2023 – Sep 2025

- Department: Human Life Design and Science (GPA: 4.00 / 4.00).
- Research Topic: Ergonomics, Assistive Technology, Exoskeleton, Motor Control, Techno-adaptability.

Open University of Japan [\[Link\]](#)

Distance Learning Program

Bachelor of Liberal Arts (Transfer Admission)

Oct 2021 – Sep 2023

- Course: Psychology and Education (GPA: 3.77 / 4.00).
- Relevant Coursework: Cognitive and Physiological Psychology, Human-Computer Interaction.

Kitakyushu National College of Technology¹ [\[Link\]](#)

Fukuoka, Japan

Associate Degree in Engineering

Apr 2013 – Mar 2018

- Department: Mechanical Engineering (GPA: 3.40 / 4.00).
- Research Area: Heat Transfer Engineering, Production Engineering.
- 🏆 Academic Excellence Award (Mar 2018) – the top 10% of students with a grade average above 90/100.

Research Experience

Laboratory of Ergonomics for All Ages and Abilities, Kyushu University [\[Link\]](#)

Fukuoka, Japan

Graduate Student Researcher

Oct 2023 – Present

- Engineered a custom 1-DOF exoskeleton testbed by integrating torque control, EMG bio-signal acquisition, and visual feedback systems using Python and C++.
- Designed and executed psychophysical experiments (N=42) using randomized block designs and counterbalancing protocols to evaluate sensorimotor adaptation under different assistance onset timings.
- Implemented an automated signal processing pipeline in Python to execute EMG filtering and normalization, synchronizing bio-signals with time-series joint kinematics to analyze dynamic motor responses.
- Key materials: [🔗 Thesis](#) [🔗 Abstract](#) [🔗 Poster](#) [🔗 Slide](#)

Thermoacoustic Engineering Laboratory, Kitakyushu National College of Technology

Fukuoka, Japan

Undergraduate Student Researcher

Apr 2017 – Mar 2018

- 🏆 The 21st Stirling Techno-rally (Nov 2017) Gold Idea Award & Bronze Prize (SC100V Class²).
 - Determined the regenerator-to-pulse-tube length ratio experimentally to maximize heat transport via air vibration.
 - The competition model was fabricated using various machining techniques, such as acrylic threading and brass boring, to implement the calculated flow path geometry.
- Developed an educational kit based on a modified Rijke tube, allowing children to experience the mutual energy conversion between heat and sound using everyday materials.

¹ Japan's national 5-year engineering college, highly selective at age 15 admission, combining upper secondary with undergraduate-level education (final 2 years equivalent to university junior/senior years).

² SC100V class: competitors seek to cool a prescribed aluminum block by 10 K using the least electrical energy.

Work Experience

SUBARU Corporation [\[Link\]](#)

Gunma, Japan

Project Manager

Apr 2022 – May 2023

- Led a cross-functional task force across five divisions to develop a Bill of Process (BOP) system, achieving a beta launch ahead of schedule.
- Defined system requirements and standardized operational workflows to systematize manufacturing knowledge management.

Production Engineer (assembly shop)

Apr 2018 – Mar 2022

- Developed 3D models of assembly processes (workers, packaging, and tooling) to enable vehicle assembly training in VR.
- Designed and delivered a hands-on training curriculum on 3D CAD modeling and kinematic analysis for over 20 junior engineers.

Publications and Talks

Journal Articles

Human Motor Responses to Different Assistance Onset Timings During Powered Elbow Flexion

Applied Ergonomics (Q1, acceptance rate 20–30%, conditionally accepted)

Daichi Kusumoto, Wen Liang Yeoh, Jeewon Choi, Ping Yeap Loh, Satoshi Muraki

Conference

Effects of Start Time in Power-Assisted Elbow Flexion on Human-Motor Cooperation

The 25th Conference of the Society of Instrument and Control Engineers, System Integration Division (2024)

Daichi Kusumoto, Teerapapa Luecha, Jeewon Choi, Wen Liang Yeoh, Ping Yeap Loh, Satoshi Muraki

[Proceedings](#) [Poster](#)

Exploring the Initiation Timing of Assistance in Cooperation with Motion Assist Devices

Japan Human Factors and Ergonomics Society 65th Annual Meeting (2024)

Daichi Kusumoto, Teerapapa Luecha, Wen Liang Yeoh, Ping Yeap Loh, Satoshi Muraki

[Article](#)

Professional Service and Community Involvement

The 66th Annual Conference of the Japan Human Factors and Ergonomics Society

Fukuoka, Japan

Student Volunteer

May 2025

Non-Profit Organization Cocoful

Fukuoka, Japan

Exercise Instructor (Part-time)

Oct 2023 – Sep 2025

- Instructed community exercise programs focused on frailty prevention for the elderly and motor skill development for children, promoting lifespan health and mobility.

Runmode Gunma (Blind Marathon Association)

Gunma, Japan

Board Member / Volunteer

Sep 2020 – Mar 2022

-  Coordinated guide-runner pairings and managed practice resumption protocols during the pandemic to maintain members' physical well-being, contributing to the support system for Kenya Karasawa's Silver Medal in the Men's 5000m T11 at the Tokyo 2020 Paralympics.

References

- Prof. Satoshi Muraki, Kyushu University | muraki@design.kyushu-u.ac.jp
- Dr. Ping Yeap Loh, Kyushu University | py-loh@design.kyushu-u.ac.jp