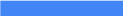


ACM SIGGRAPH 2022 Art Gallery

Sympathetic wear

Junichi Kanebako
Kobe Design University
Japan
kanejun@gmail.com

Haruki Nakamura
Sannane G.K
Japan
hanakamu@sannane.dev



Naoya Watabe
Joshibi University of Art and Design
Japan
watabe12081@venus.joshibi.jp

Keisuke Shuto
Joshibi University of Art and Design
Japan
shuto07010@venus.joshibi.jp

Miki Yamamura
Joshibi University of Art and Design
Japan
yamamura09014@venus.joshibi.jp

Hiroko Uchiyama
Joshibi University of Art and Design
Japan
uchiyama96022@venus.joshibi.jp

Junichi Kanebako
Kobe Design University
Japan
kanejun@gmail.com

Haruki Nakamura
Sannane G.K
Japan
hanakamu@sannane.dev

Naoya Watabe
Joshibi University of Art and Design
Japan
watabe12081@venus.joshihi.jp

Keisuke Shuto
Joshibi University of Art and Design
Japan
shuto07010@venus.joshihi.jp

Miki Yamamura
Joshibi University of Art and Design
Japan
yamamura09014@venus.joshihi.jp

Hiroko Uchiyama
Joshibi University of Art and Design
Japan
uchiyama96022@venus.joshihi.jp

Authors

Junichi Kanebako

An **interactive artist, haptic designer**, and educator based in Kobe, Japan. He graduated from Iwate Prefectural University, where he earned Bachelor of Software and Information Science in 2006, and received Ph.D in Kansei Science from University of Tsukuba in 2016. As an educator, He is currently **Associate Processor at Kobe Design University**. He is skilled in the expression of works that **convert sound into vibration**, and his recent works are in the collection of the Nagano Prefectural Art Museum (Japan).



Touch the sound picnic

2017

Visitors go on a picnic wearing ear muffs so they can hear no sound, and equipped with the artist's self-built device that **translates sound into vibration**. The work will remind those who experience it **how we automatically use our eyes, nose, skin or other part of the body, to sense what is happening around us once we are unable to perceive sounds with our ears**. Suggested here is an alternative way of appreciating a sound installation without depending on hearing, through a tactile perception of sound instead.



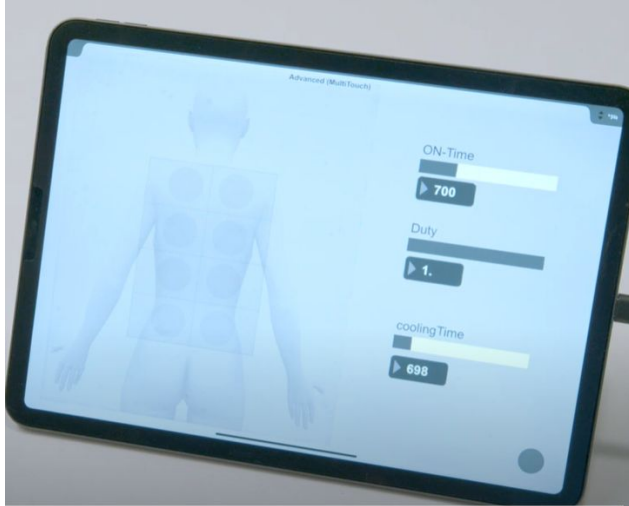
DESCRIPTION OF ARTWORK

In situations where people must maintain physical distance from one another and rely on communication through digital screens, we sometimes **feel a sense of absence and loneliness**. Sympathetic Wear is artwork that **supplements communication through digital displays and considers the person on the other side of the network**. When we are sad or in pain, the action of having our backs rubbed can provide comfort. Adopting the back as our theme, Sympathetic Wear brings gentle healing to people's minds and bodies by creating a soft tactile sensation on the back that is invisible on screen.



DESCRIPTION OF ARTWORK

The actuator, **“expanding leaf,”** can create the sensation of pressure by causing a 3D-printed resin leaf to bend through the placement of **shape memory alloy wire** in a unique design. In this work, one can feel the vitality of plants in the form of a gentle caress and light patting on the back.



DESCRIPTION OF ARTWORK

As we sit continually facing the screen, we human beings can feel as if we had become a plant with roots growing into the chair. The transformation of human beings from animals into plants is reflected in this work as an image of a tree rooted in the earth. The threads used in the work are perceived as the fibers contained in plants, and by assembling each one by hand we were able to achieve an organic work affording a sense of vitality and warmth. We hope to bring greater tenderness to our daily lives by deepening the relationships between us, expressing feelings of closeness, compassion and encouragement through the human back.





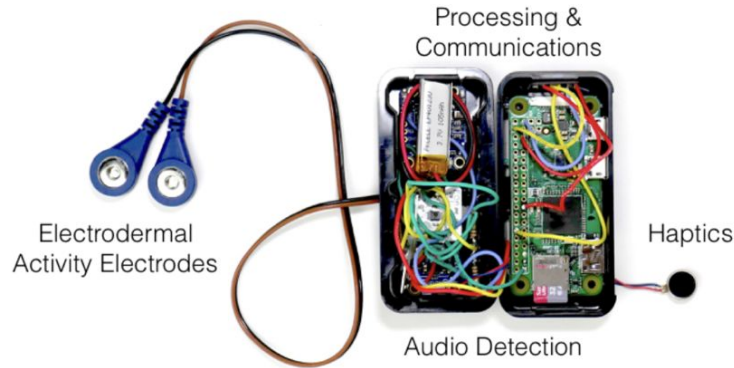
The threads used in the work are perceived as the fibers contained in plants, and by assembling each one by hand we were able to achieve an organic work affording a sense of vitality and warmth.



published at 2020 ACM Designing Interactive Systems Conference (July 2020)

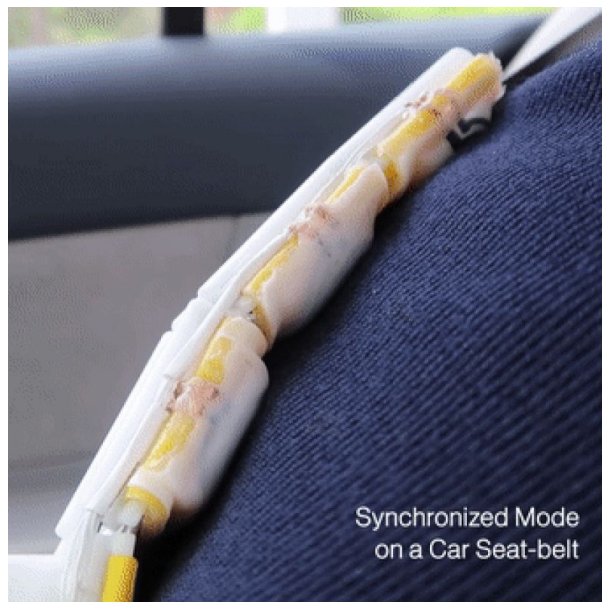
Connection

"Project Us" uses wearable devices (wristbands) to trigger an empathy-enhancing effect during day-to-day conversations. These small wireless devices sense each person's electrodermal activity and share it with the other partner through a discreet, haptic nudge, creating a real-time feedback loop. The user study conducted with 18 participants revealed that most of them found the wristbands to increase their awareness of their partner's emotional experience. The project aims to overcome the challenges of existing techniques that are difficult and expensive to deliver and disconnected from daily life.



aSpire: Clippable, Mobile Pneumatic-Haptic Device for Breathing Rate Regulation via Personalizable Tactile Feedback

We explore a pneumatic-tactile feedback system as an effective and engaging tactile guidance for effortlessly regulating breathing rate (BR), and introduce a clippable design which turns a commonly-worn belt/strap (e.g., waist-belt, seat-belt, straps of backpack and cross-bag) into a tactile feedback interface.

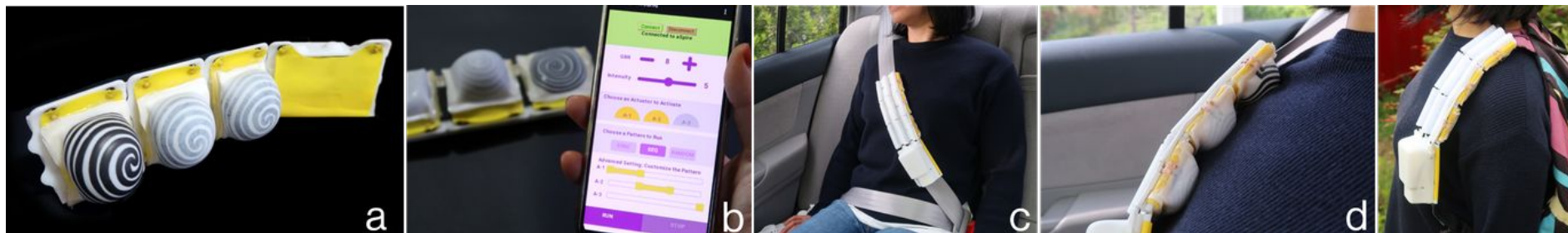


Synchronized Mode
on a Car Seat-belt



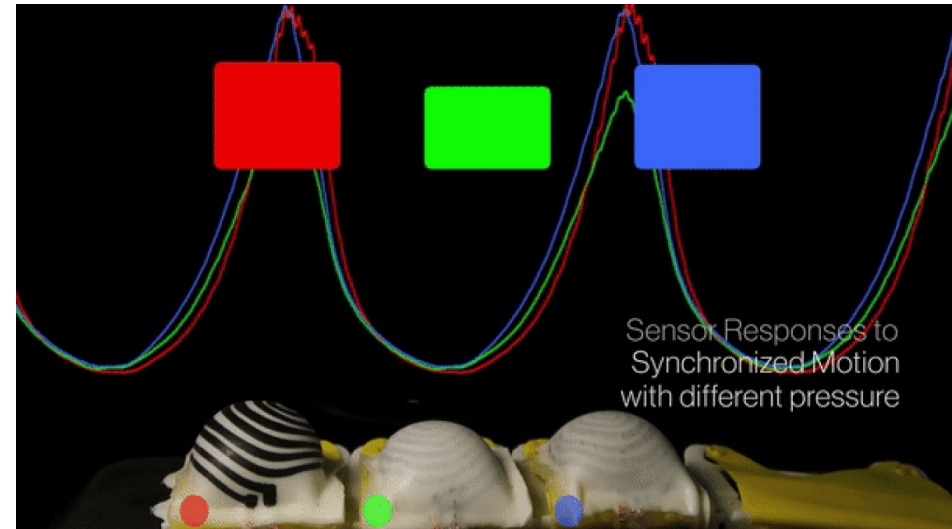
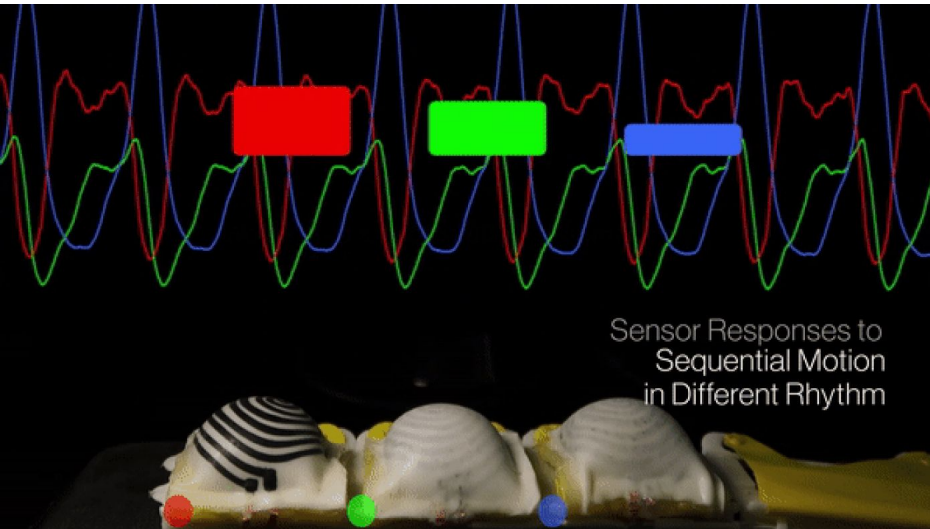
Sequential Mode
on a Cross-bag

Connection



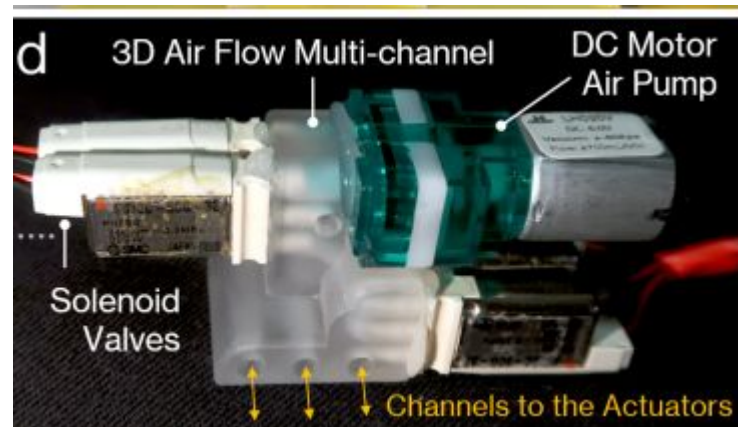
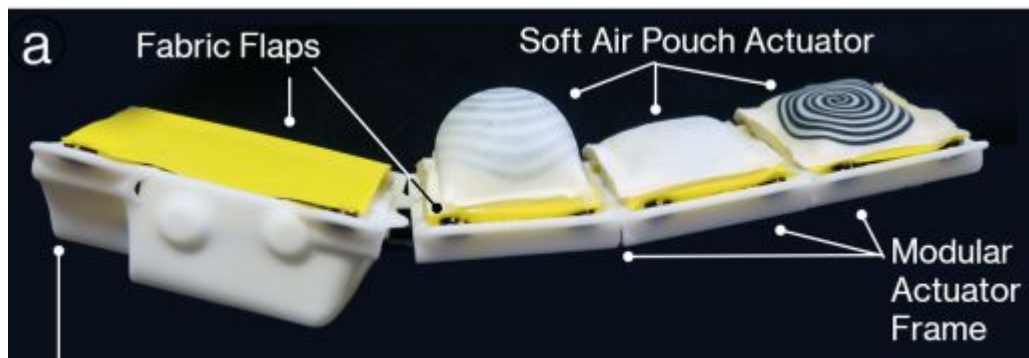
(a) aSpire, a clippable pneumatic-tactile feedback device with 3 soft actuators. (b) Control UI that allows users to select/create different tactile patterns. (c) User test of aSpire on passengers in on-road commuting environment. aSpire clipped on; (d) a seat-belt for breathing guidance and providing comfort for vehicle passengers, (e) a back pack strap during walking.

Connection



Connection

aSpire consists of three soft air pouch actuator modules and a pneumatic control system module. Each actuator is paired with a 3-way solenoid valve. The DC motor air pump is connected to two solenoid valves that control the open/close of the outlet and inlet of the motor. Based on these 5 solenoid valves' ON/OFF state combination as shown in the state table (figure below (b)) and its ON/OFF duration, the system can individually control the deformation speed of the actuator using a single motor.



Reference

Sympathetic wear PaperLink :

<https://dl.acm.org/doi/10.1145/3532837.3534955>

Junichi Kanebako Website:

<http://www.kanejun.com/>

MIT FLUID INTERFACES Lab:

<https://www.media.mit.edu/groups/fluid-interfaces/overview/>

Project Us

<https://www.media.mit.edu/projects/project-us/overview/>

Touch the sound picnic

http://www.kanejun.com/works_ttsp.html