A haptic partner that supports children's minds

Project manager

Hiroyuki Shinoda

Graduate School of Frontier Sciences, The University of Tokyo

leader's institution

The University of Tokyo

R&D institutions

The University of Tokyo
Kobe University

Summary of the project

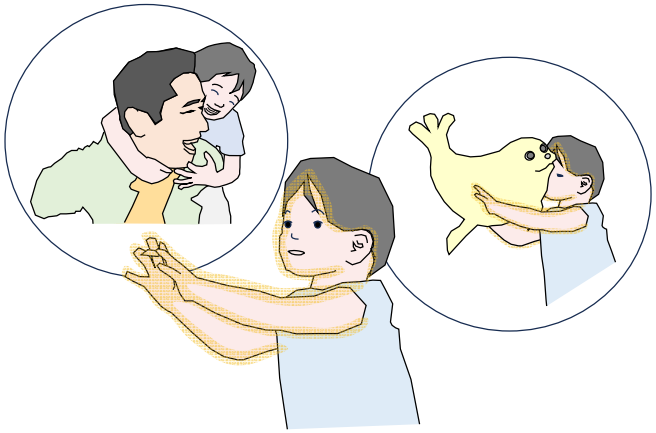
Children have not yet developed their language and logical thinking skills and have little experience overcoming difficulties. To save such children from mental disorders, technological support through physical interaction and sensory stimulation is desired in addition to conventional verbal encouragement. The key is to use the sense of touch, which plays a crucial role in mental growth, particularly during early childhood.

This project focuses on a haptic partner based on noncontact tactile reproduction technology that can replicate various tactile sensations in a wide skin area. The haptic partner is an AI partner that interacts with children through tactile senses in addition to visual and auditory senses. It influences emotions including pleasantness and arousal, stabilizing the children's minds and enabling them to achieve the desired mental response. The haptic partner's appearance and tactile feel change according to each child's preference and situation, becoming the optimum companion for each child.

Milestone by the end of project (year 2024)

To prove that airborne ultrasound tactile stimulation can reproduce the sensation that is supposed to be produced in children gently touched by their caregivers. Specifically, we will prove through psychophysical experiments on adults that ultrasound can produce a pleasant sensation equal to or greater than that produced by contact with real objects.

R&D theme structure of the project



Noncontact tactile stimulation encourages children.