



Zen Belt - Deformable Interfaces for Guided Breathing Exercises

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Summary

Breathing exercises offer significant mental health benefits, but current technology lacks intuitive, adaptive experiences for users. Zen Belt addresses this through multimodal guidance combining pneumatic actuation, stretch sensing, and synchronized audio-vibrotactile feedback to support box breathing exercises.

Our prototype employs custom silicone air cushions that inflate and deflate against the user's abdomen, adapting to individual breathing patterns in real-time through a self-knitted stretch sensor. This proof-of-concept demonstrates how deformable interfaces can enhance immersion in mindfulness practices by providing tactile feedback directly at the site of breathing.



LINK TO THE REPORT & VIDEO

<https://shorturl.at/6DqOy>

