

SkinMarks

Enabling Interactions on Body Landmarks
Using Conformal Skin Electronics

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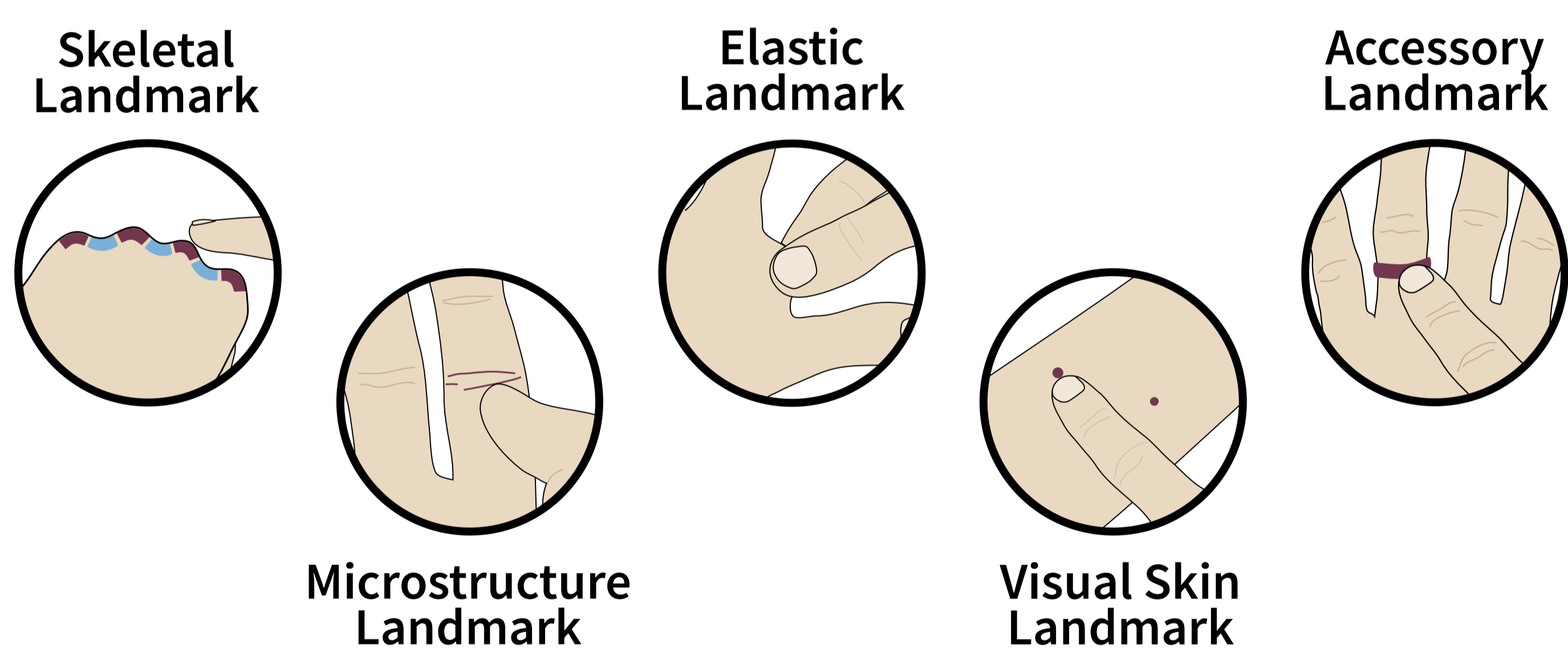


The body provides many recognizable landmarks.

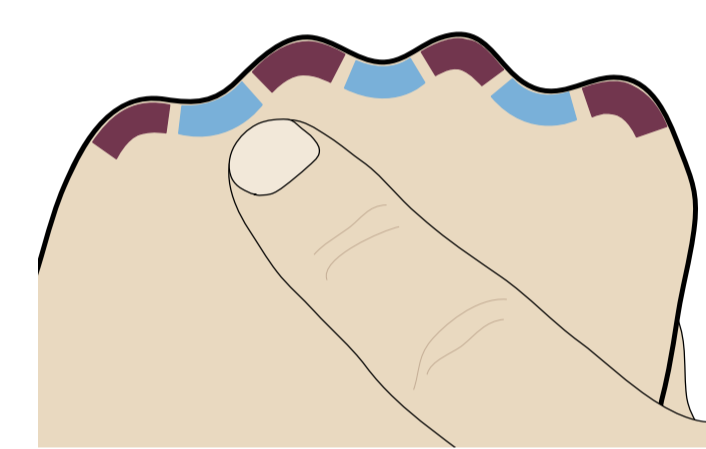
We identify five types of body landmarks, present a technical enabler, and investigate novel interaction techniques. This expands the on-body interaction space to detailed, highly curved, and challenging body areas.

Body Landmarks

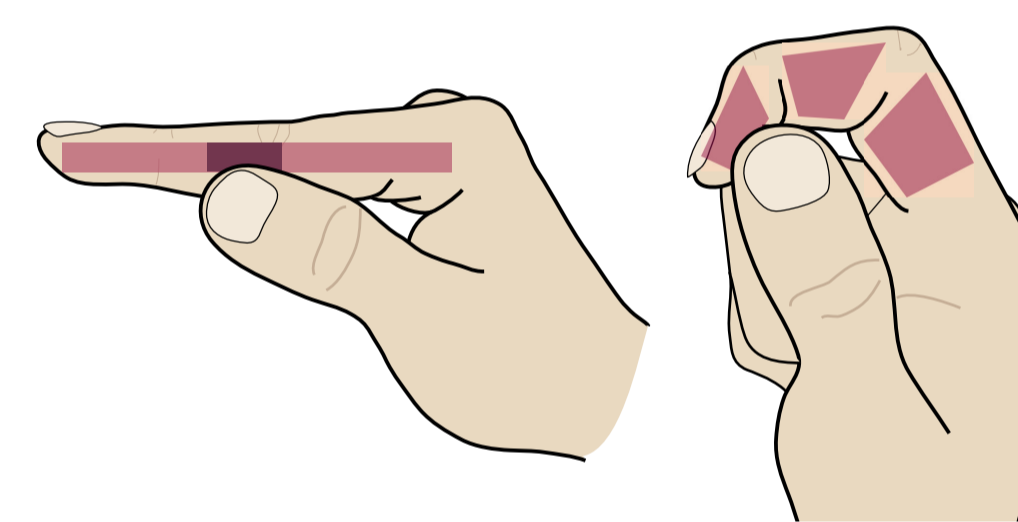
Body landmarks are locations on the body that are *tactually* or *visually distinct* from their surroundings. They can help users to *localize* interactive elements, *guide* the users' interactions, and help to *recall* the mappings between location and functionality.



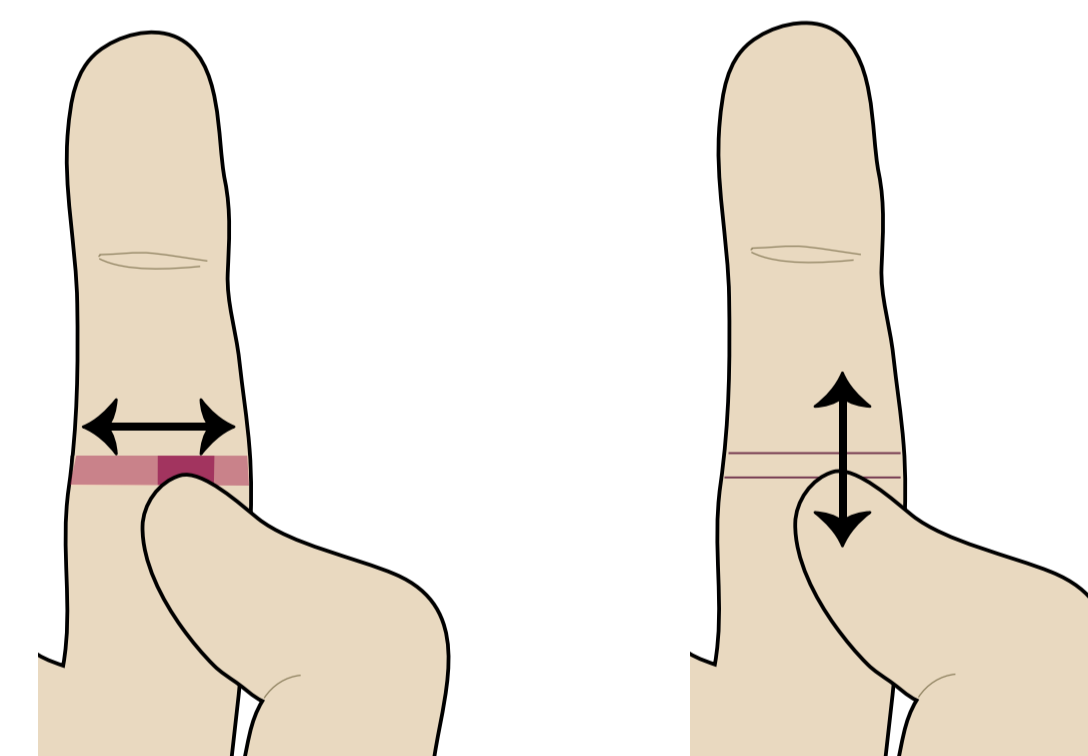
Interaction Techniques



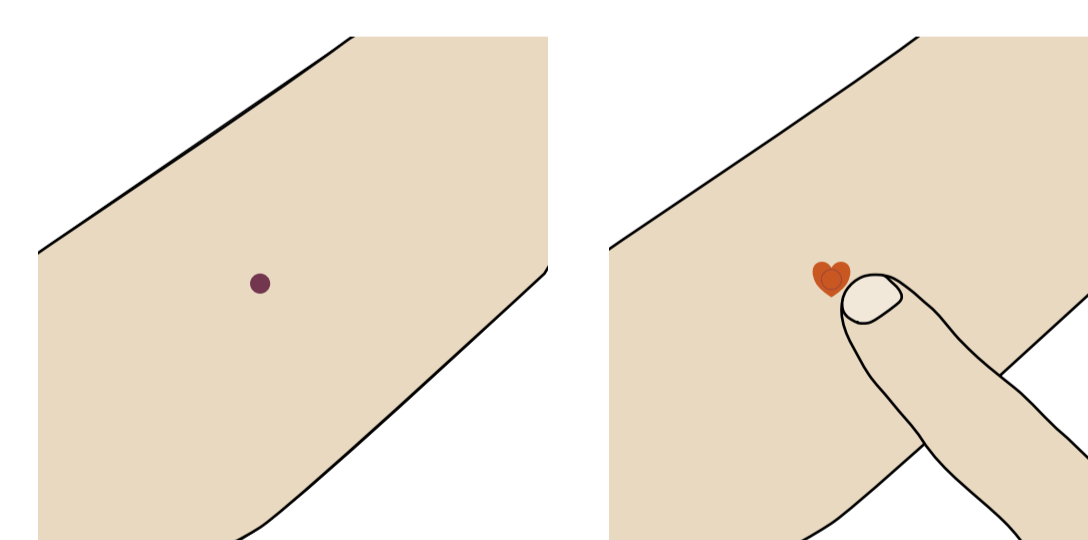
The knuckles are a skeletal landmark with four peaks and three valleys. Each can be used as a separate button.



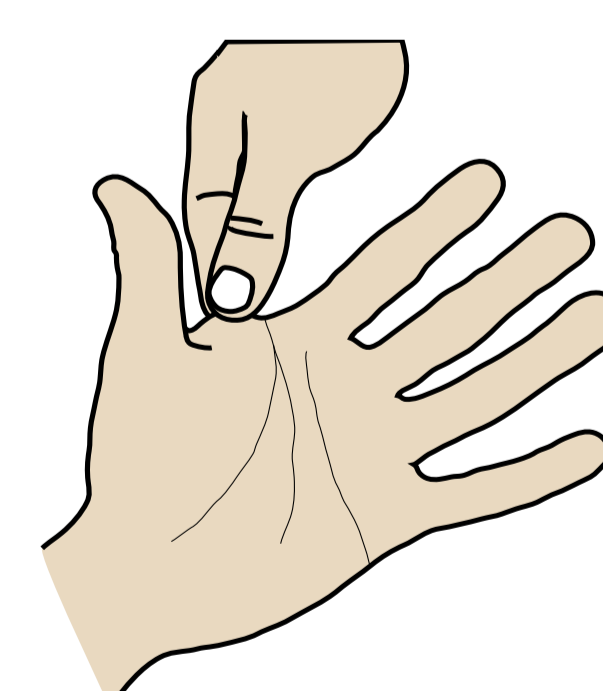
The body supports dynamic interface elements using pose-based input: A straight finger allows for sliding. When the user bends his finger, the UI switches to three buttons.



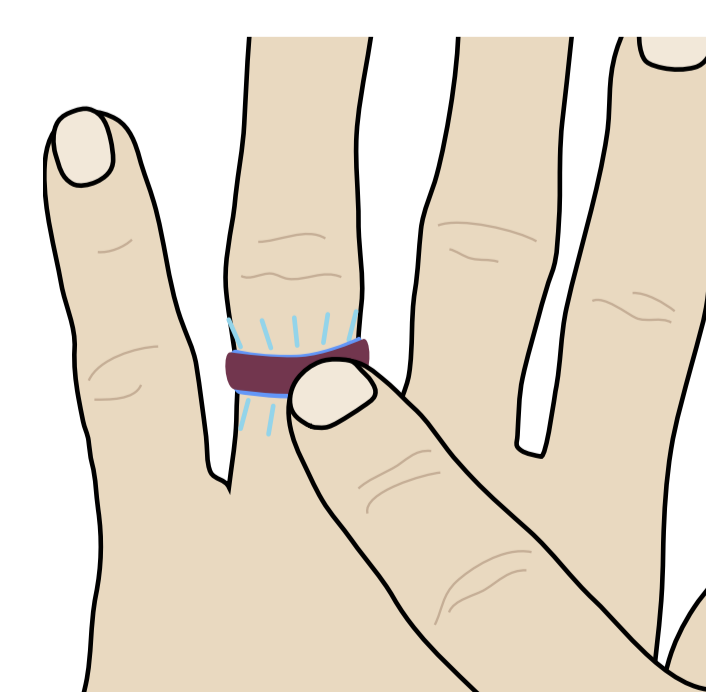
Skin microstructures such as a flexure line give highly localized tactile feedback. The user can either slide along the flexure line to control a slider or slide across to set a toggle value.



Visual landmarks on the skin can be leveraged to provide personalized and dynamic visual cues for on-body interaction.

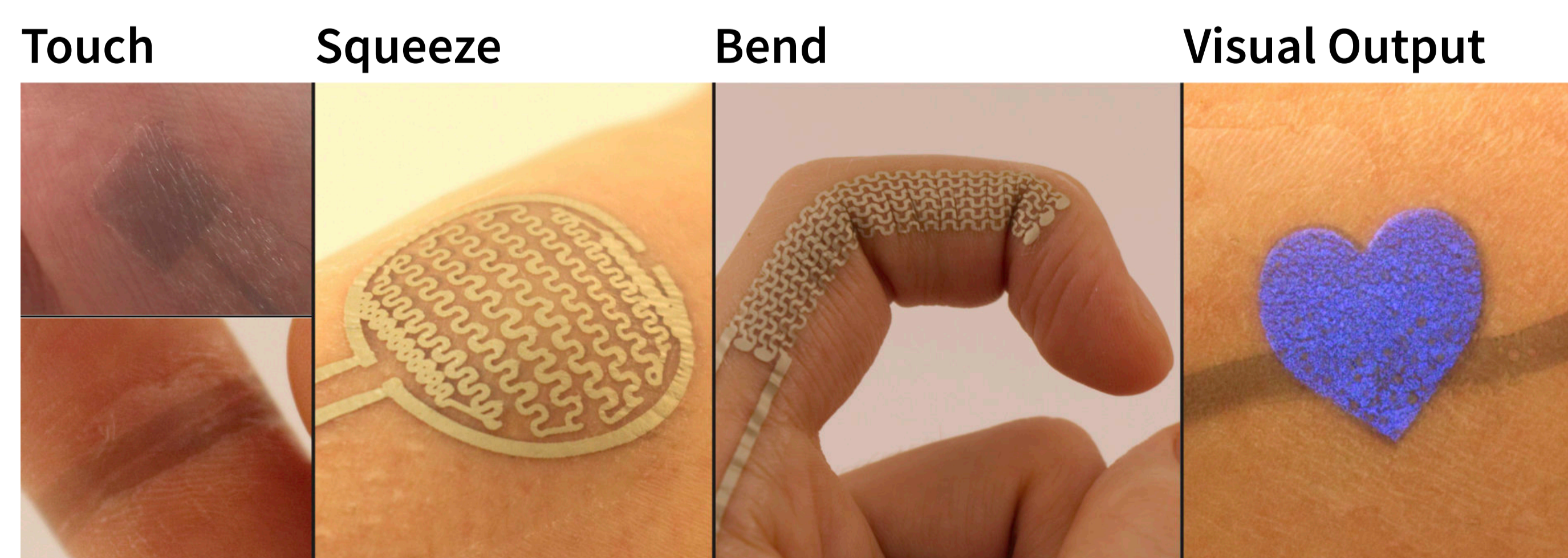


Localized deformation input enriches the input vocabulary of landmarks.



Passive accessories can be illuminated and can be made touch-sensitive using SkinMarks.

Sensor Types and Displays



Highly Conformal Form Factor

