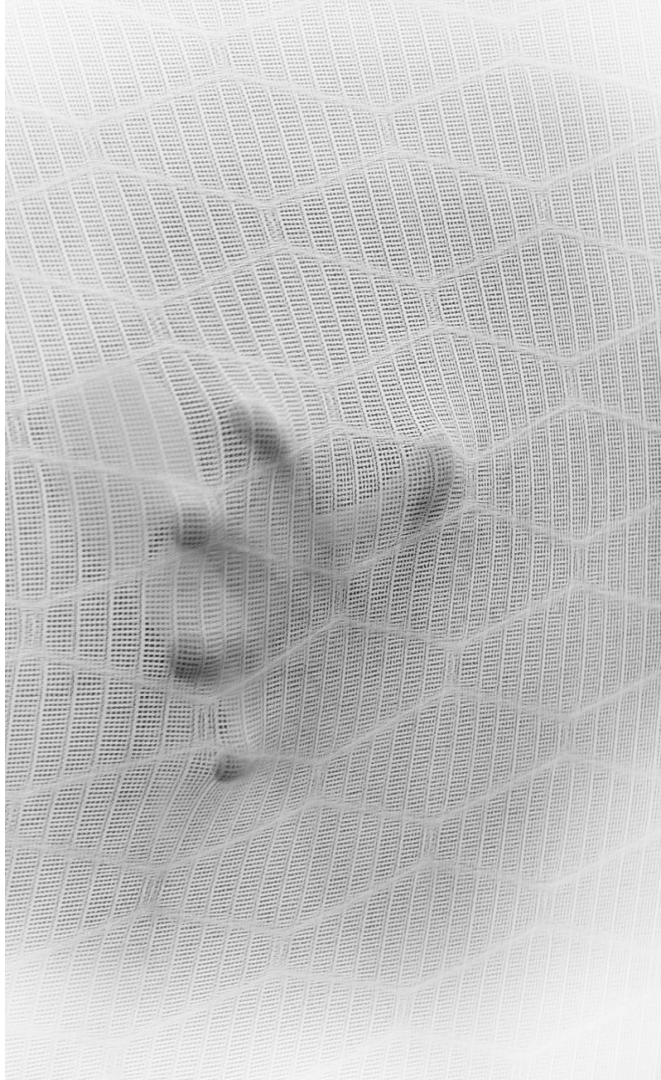
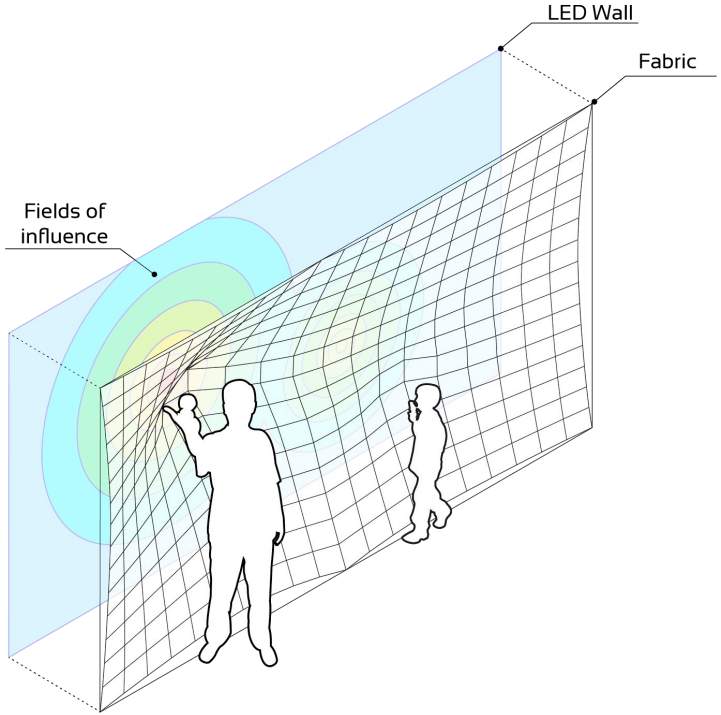
Light Membrane

Randy F | Iryna G | Karim M



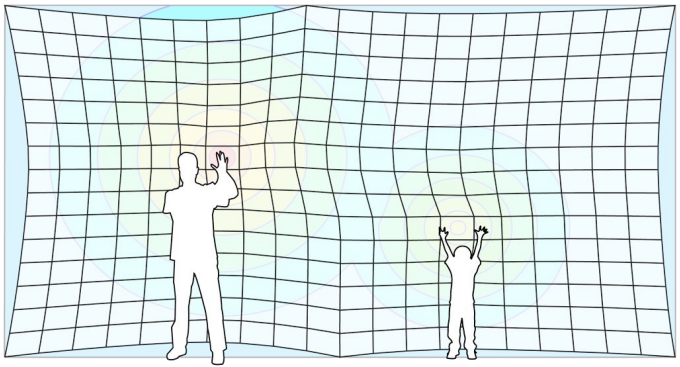
Description

The mediation of variable LEDs to provide a second visual medium (color) accentuating topographical form changes of surface membrane as it is interacted with; representing the force and magnitude of the distortions through a veiled display of colored pixels that manifest collectively as a smooth gradient

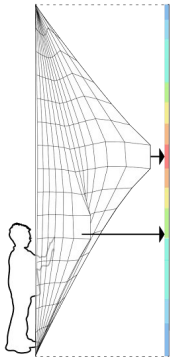


Representational Diagrams

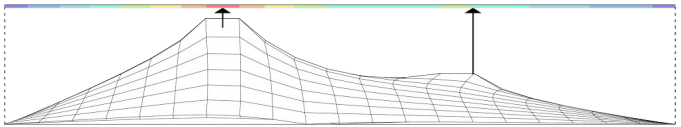
LED wall corresponds to topographical change through a mapped RGB color scale, detectable through the mildly translucent fabric membrane



Front View

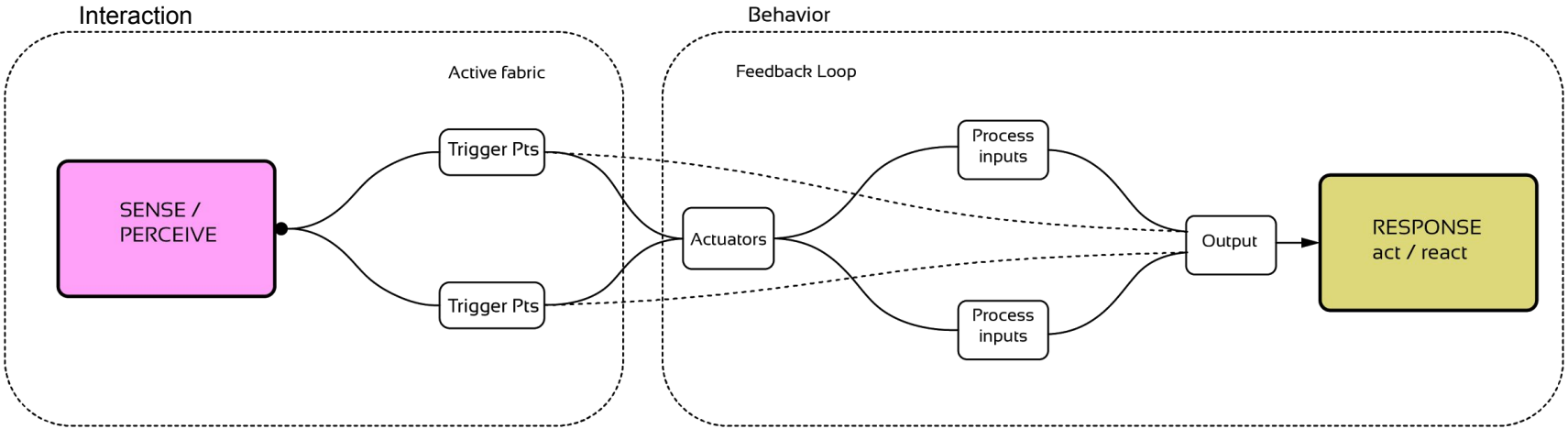


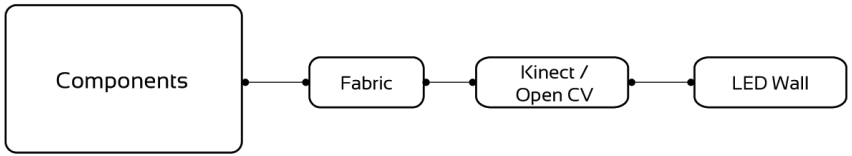
Right View



Top View

Schematic Diagrams

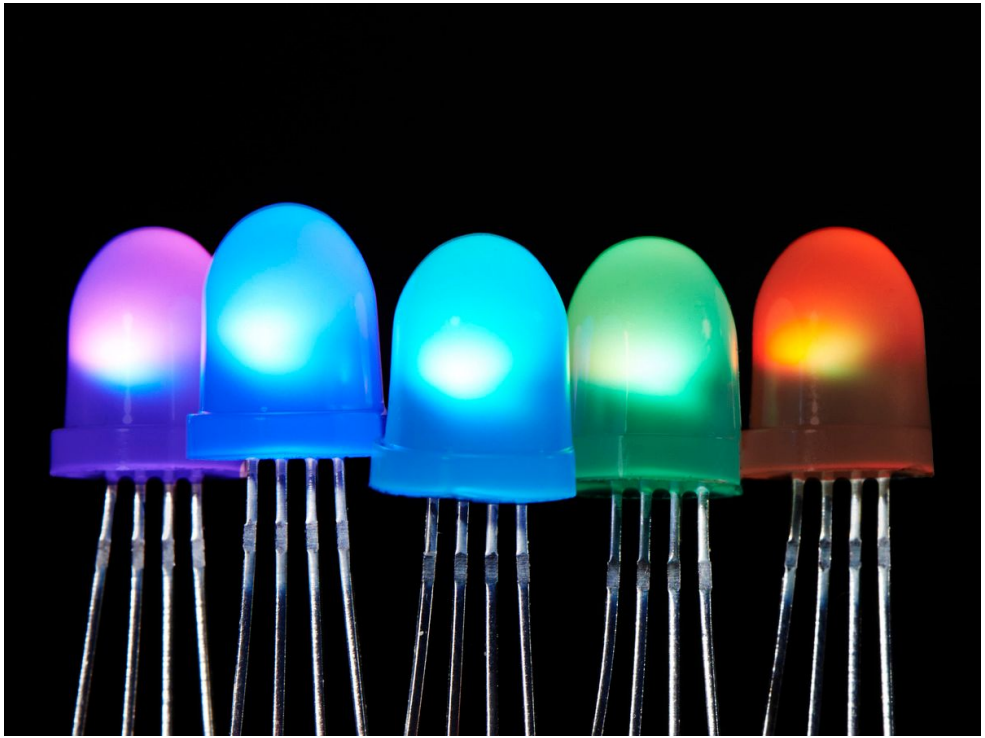




LED Wall

Diffused LEDs:

The LED wall can be comprised of a course pattern of diffused RGB LEDs in order to distribute the light evenly across the fabric membrane. The code would call various values in the bits to associate a color with the topographic analysis of the fabric membrane.



Visual Recognition Options

OpenCV: (Open Source Computer Vision)

This learning software library was built to provide a common infrastructure for computer vision applications. The algorithms that are a part of this library can be used to detect and recognize faces, identify objects, classify human actions in videos, track camera movements, track moving objects, and etc.

Kinect:

The Kinect developed for XBox can be used to read gestures of profiles or perform scans of the environments. A user's gesture is interpreted using a depth camera, and projecting a laser grid onto surfaces to create information by scanning distortions. This sensor can also be used for voice command recognition that can be paired with the gestures or used for voice controls.

Interaction Animation

LED patterning is associated with topography of fabric membrane. Animation showcases potential reactive properties of LED Wall due to the physical interaction with the membrane.