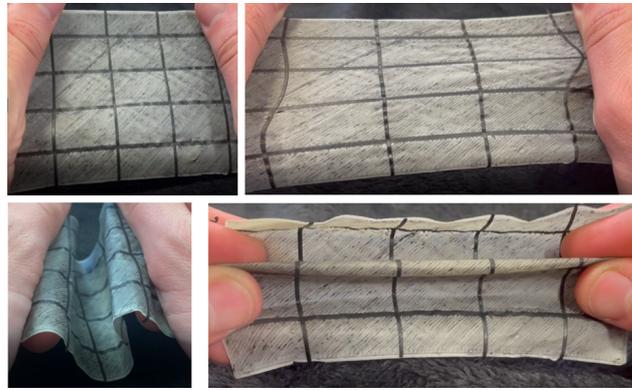
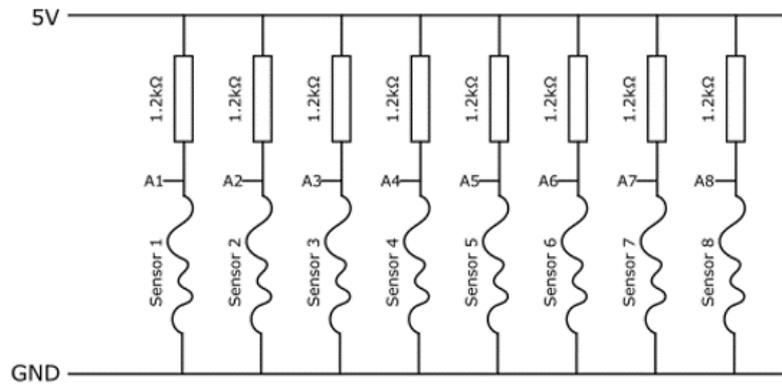


**Table S1.** Key differences between the two works compared in Figure 8.

	<b>This Work</b>	<b>Thuruthel et al. [30]</b>
<b>Sensor material</b>	Styrene-based tri-block co-polymer & carbon black	Conductive thermoplastic elastomer (CTPE)
<b>Substrate material</b>	Styrene-based tri-block co-polymer	EcoFlex 00-20
<b>Fabrication method</b>	3D printing	Manual positioning & casting
<b>Thickness (mm)</b>	0.3 → 1.2	10
<b>Grid size</b>	4 × 4	4 × 4
<b>Probed area (mm)</b>	27 × 27	33.75 × 33.75
<b>Probe diameter (mm)</b>	5	7.5
<b>Depth probed (mm)</b>	2	4
<b>Number of samples</b>	5000	7400
<b>Hidden layer size</b>	100	50



**Figure S1.** Flexibility and stretchability of a 0.3mm printed sensor grid.



**Figure S2.** A schematic of the resistive sensing setup, which consists of 8 potential dividers in parallel. The GND & 5V outputs and the analog inputs are all connected to a microcontroller. In this schematic the sensors are assumed separate, though some channels in the optimized print are in contact. This introduces additional resistances between the 8 branches, the effect of which can quickly be learned by the neural networks.