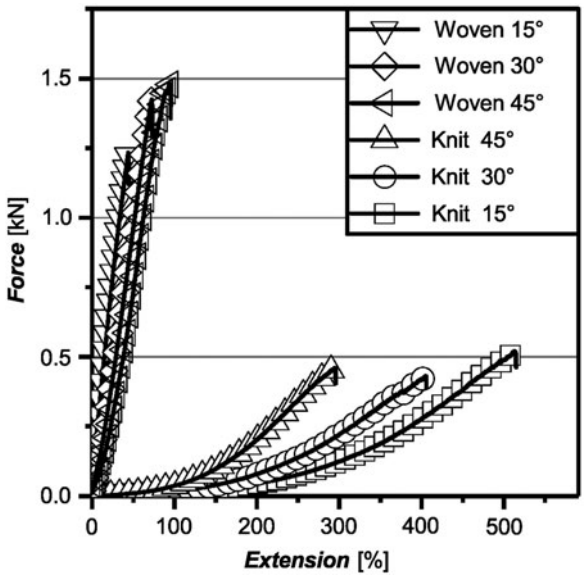
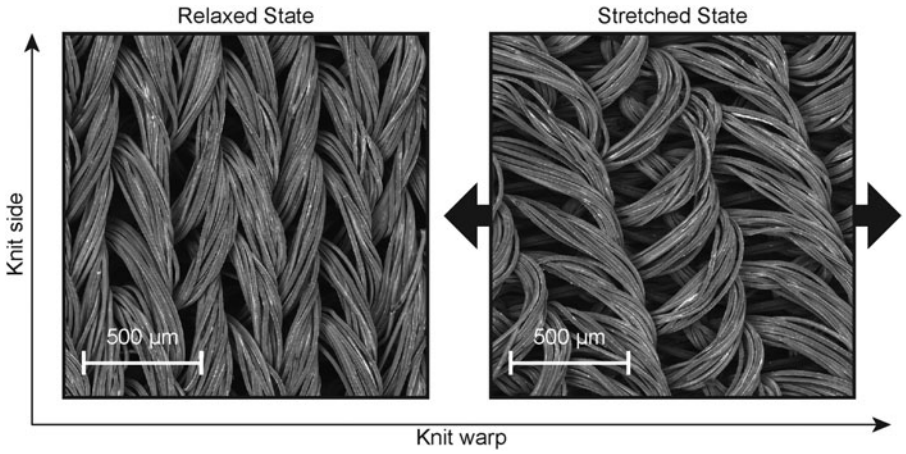
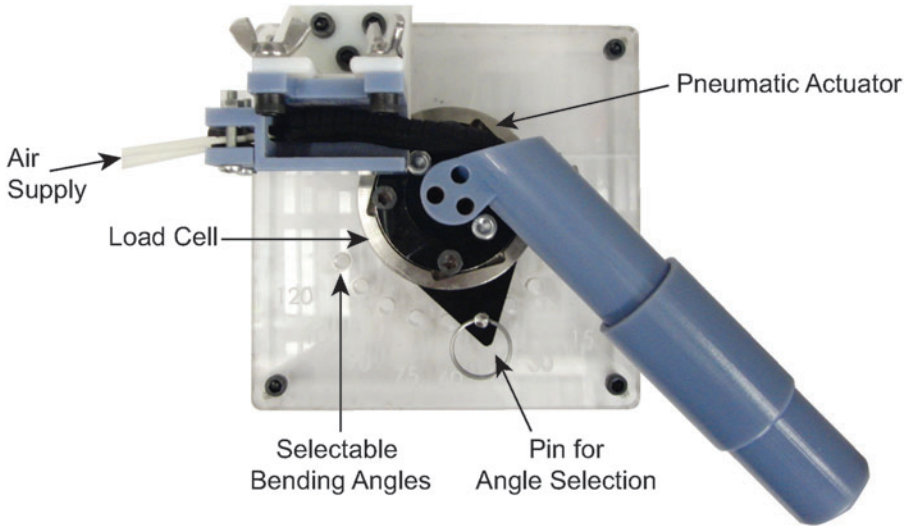


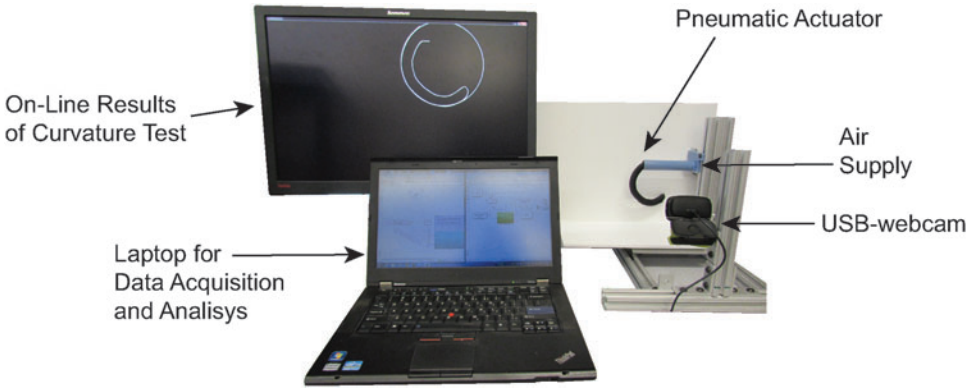
SUPPLEMENTARY FIG. S1. Load-strain characteristics of woven and knit textiles tested along diagonal directions. The angles are relative to the warp direction (N = 3).



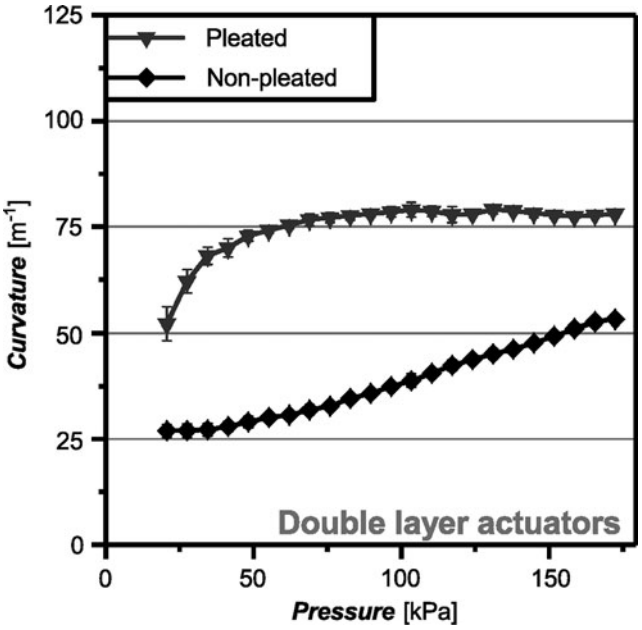
SUPPLEMENTARY FIG. S2. Scanning electron microscope images of the same sample of knit fabric in relaxed state and stretched along the warp direction.



SUPPLEMENTARY FIG. S3. Test rig used to capture torque data corresponding to the applied pressure when the fabric-based actuator is bent at selectable angles.



SUPPLEMENTARY FIG. S4. Test rig to capture curvature data corresponding to the applied pressure.



SUPPLEMENTARY FIG. S5. Curvature data collected for bidirectional fabric-based actuators (N = 5).

SUPPLEMENTARY TABLE S1. LOAD-STRAIN VALUES AT FAILURE FOR SAMPLES OF WOVEN TEXTILES ORIENTED ALONG THE MAIN DIRECTIONS AND ALONG DIRECTIONS NOT PARALLEL WITH THE WARP AND WEFT

	Woven warp	*Woven weft*	*Woven 15°*	*Woven 30°*	*Woven 45°*
Force at failure (N)	2009.4	1533.6	1233.8	1424.2	1480.0
Strain at failure (%)	76.8	72.2	43.8	72.7	94.7
	Knit warp	*Knit side*	*Knit 15°*	*Knit 30°*	*Knit 45°*
Force at failure (N)	694.6	1174.8	520.8	431.2	460.5
Strain at failure (%)	543.3	242.4	512.7	404.7	295.3

The angles are relative to the warp direction and load-strain values at failure for samples of knit textiles oriented along main directions and along directions not parallel with the main textile directions. The angles are relative to the warp direction.

Supplementary Table S2. Comparison of Load-Strain Values for Nonpleated and Pleated Specimens of Knit Textiles

Strain (%)	*Load—nonpleated (N)*	*Load—pleated (N)*
50	5.7	2.1
100	10.7	3.9
200	28.5	7.5
300	86.1	23.3
400	250.7	52.2
500	550.3	83.1