LiftTiles
Modular and Reconfigurable Room-scale Shape Displays through Retractable Inflatable Actuators

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Room-scale Shape Display
This paper introduces LiftTiles, a modular and reconfigurable room-scale shape display by leveraging retractable inflatable actuators.

Inflatables + Force Spring
Actuators can extend with air supply and retract with constant force spring.

Applications

Compact: 15 cm in height
Extendable: up to 1.5m with air supply
Strong: withstand 10kg object
Lightweight: 1.8kg for each unit
Large Footprint: 30cm x 30cm
Low-cost: $8 USD for each unit
Modular: reconfigurable (horizontal + vertical)