



# TACFAB: TACTILE SENSORS FABRICATION FOR ANY ROBOTS

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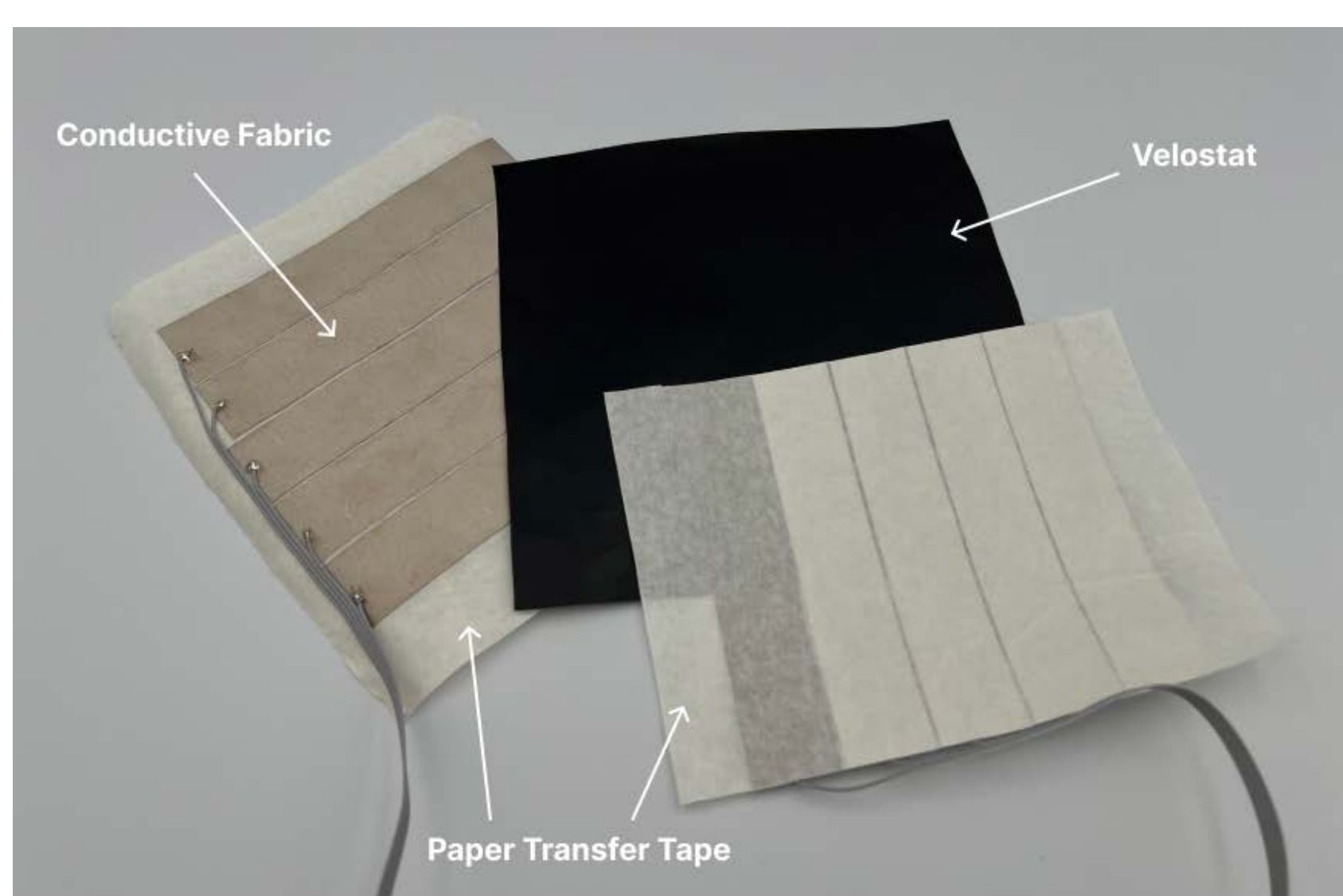
## Tactile Sensors

- GelSight sensors effective but costly and difficult to adapt
- Existing methods require complex processes and expensive materials
- Embedded flexible circuits face manufacturing limitations
- Gap exists for affordable, adaptable tactile sensing solutions
- Flexible sensors show promise for complex geometries

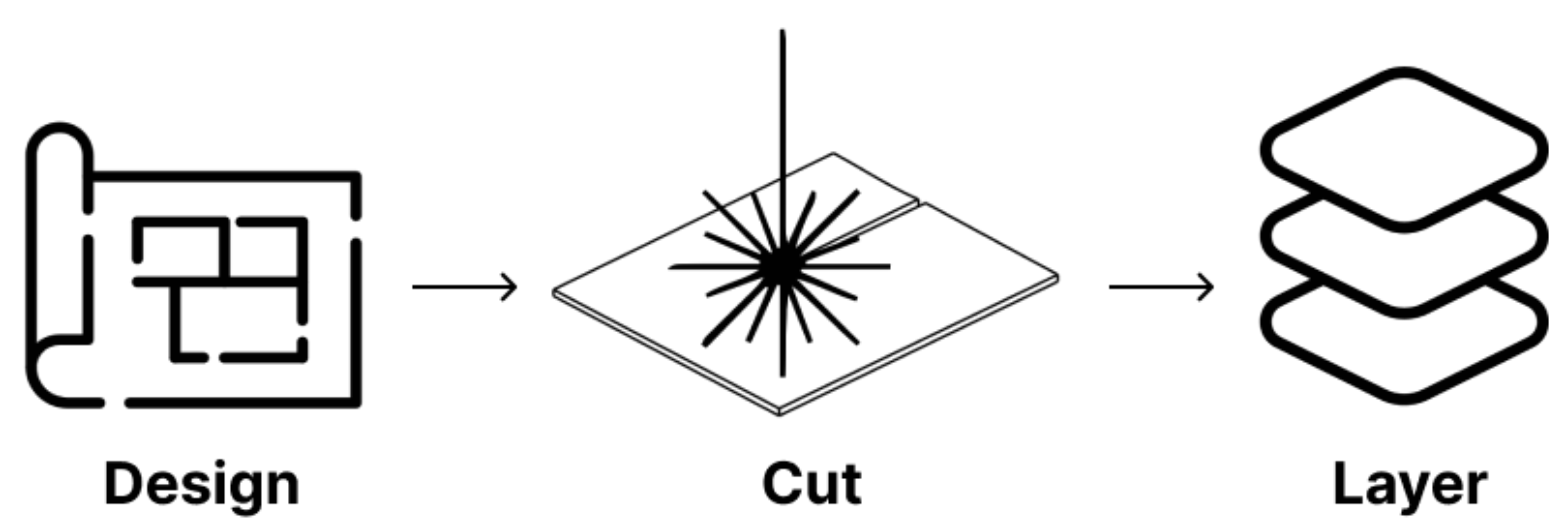
## Accessibility

- Uses off-shelf materials: Paper transfer tape, Conductive fabric, Velostat
- Fraction of cost versus commercial solutions
- Requires only standard laser cutting equipment
- Accessible to researchers, educators, industry
- Democratizes tactile sensing technology

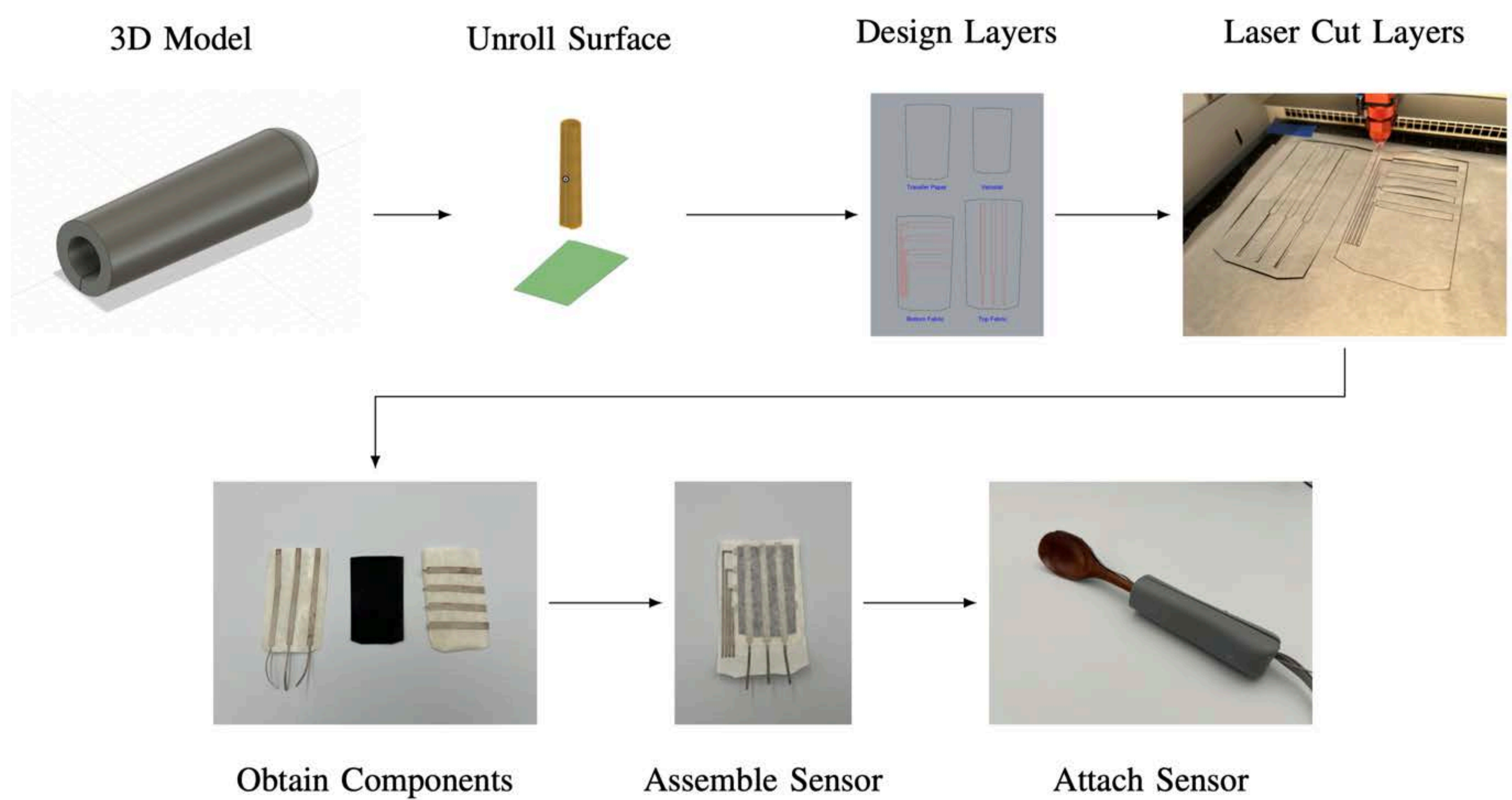
## Workflow



a. 5-layer Tactile Sensor Structure

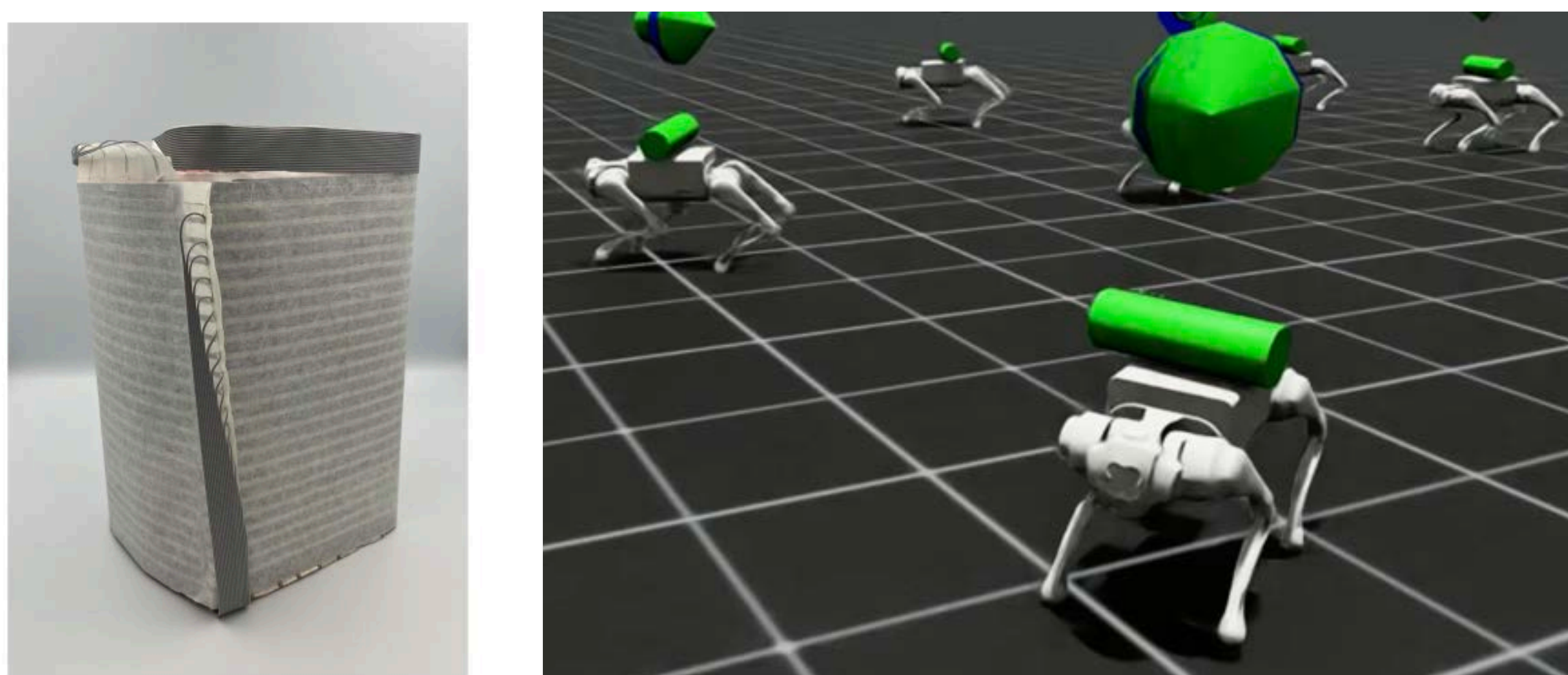


b. TacFab Workflow



## Scalability

60cm x 30cm, Over 700 Sensors



Robot Dog Torso

5cm x 4cm, 9 Sensors



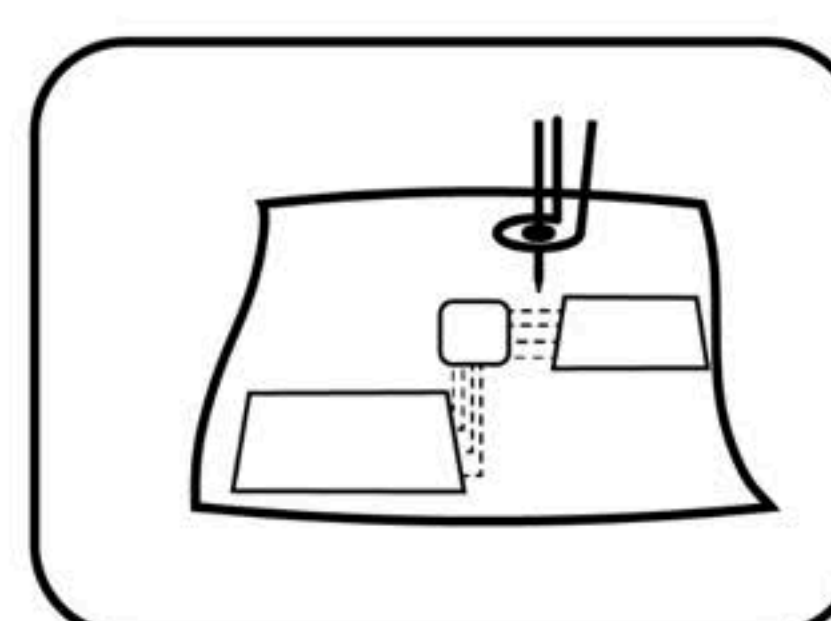
Teleoperation Instrumental Tool



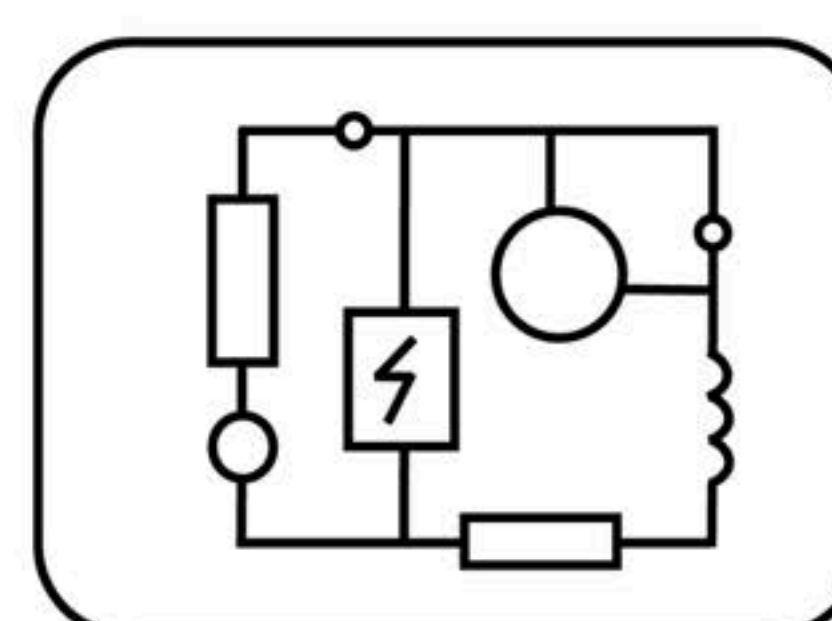
## Tactile Skin Toolkits

TacFab is part of Tactile Skin Toolkits.

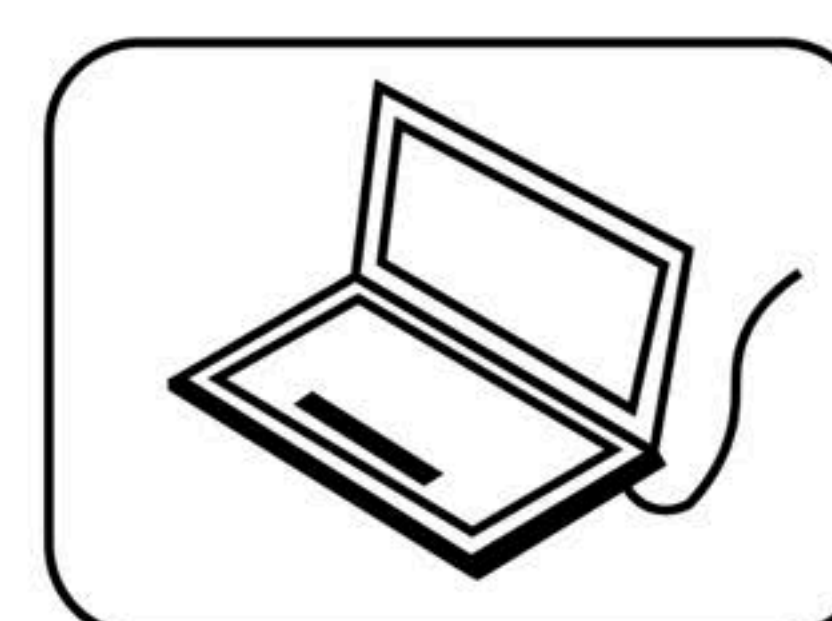
The Tactile Skin Toolkit grew out of research conducted at MIT on scalable tactile sensing. The goal is for the Tactile Skin Toolkit to be a useful and accessible shared resource that can help advance different fields. We hope to continue to improve and expand the Toolkit.



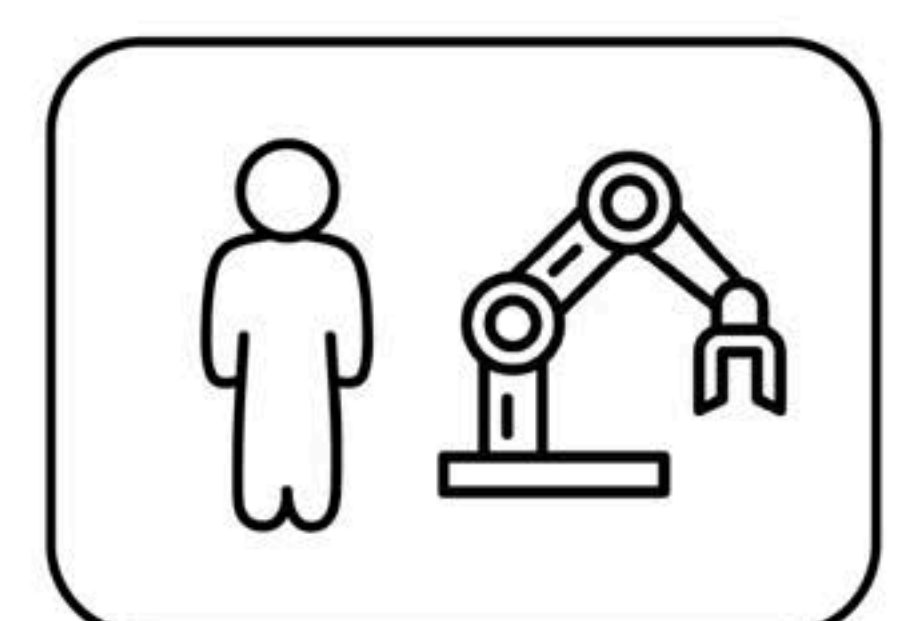
Design & Fabrication



Circuits



Control



Application

