

Building flexible smartphones and designing for deformable UIs

My phone can bend?



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PaperPhone:  
Understanding the Use of Bend Gestures  
in Mobile Devices with  
Flexible Electronic Paper Displays





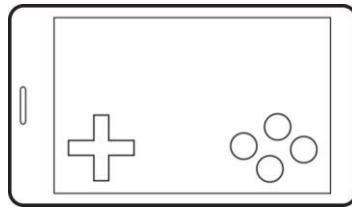
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Can flexible displays improve how we interact with our devices?

# Issues with Rigid Mobile Devices



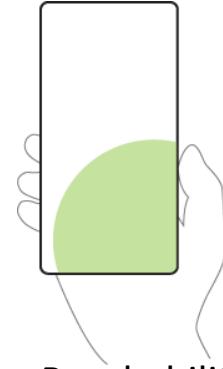
Occlusion  
problem



Small screen shared  
between content &  
controls

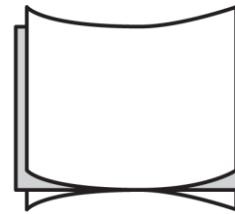
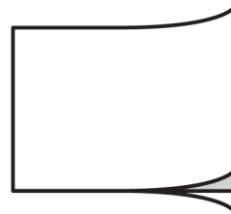
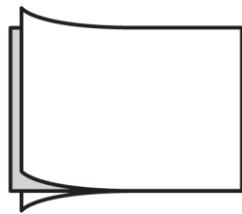
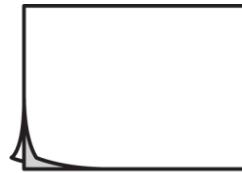


Touch not always  
available



Reachability  
issues

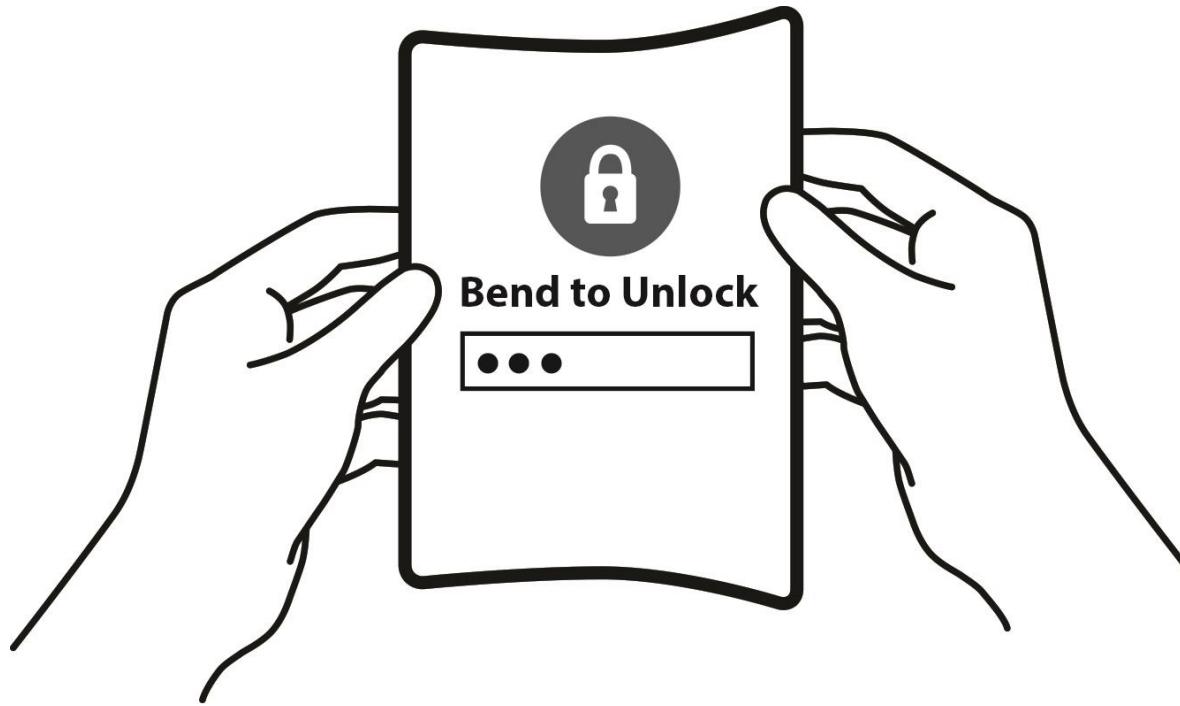


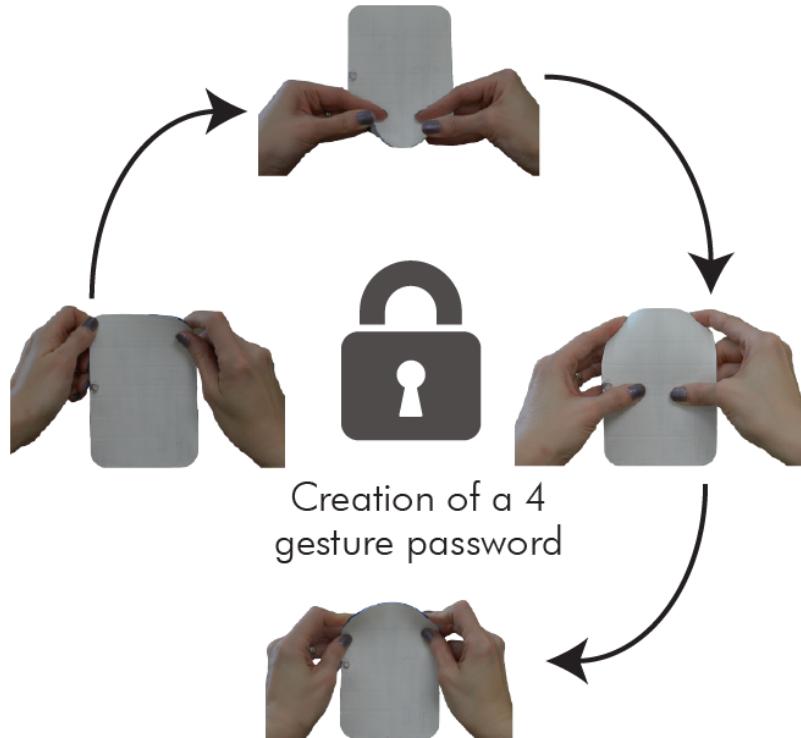




# Deformable UIs

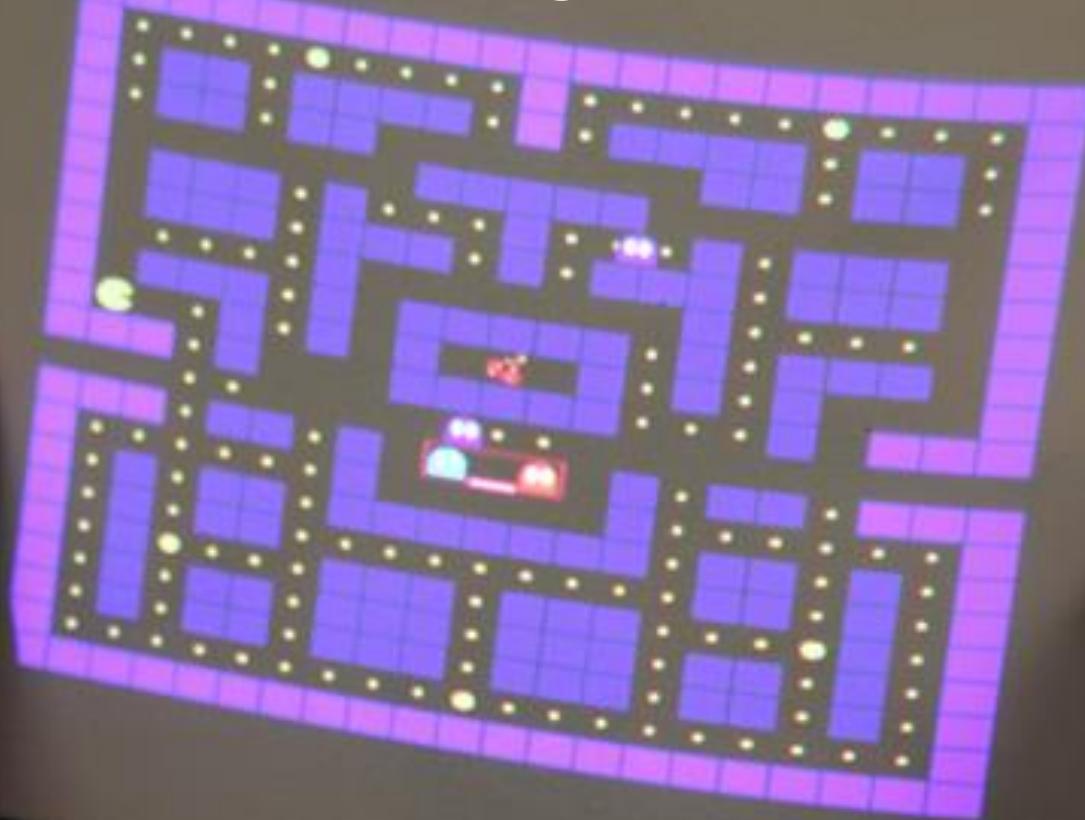




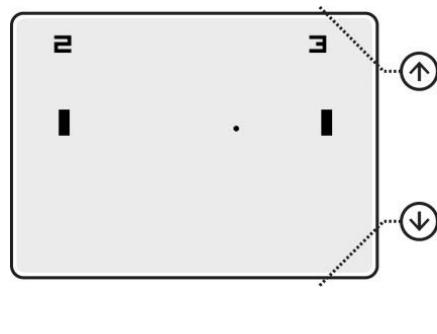




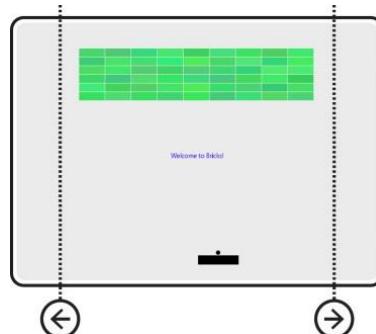
# Bend Interaction in games



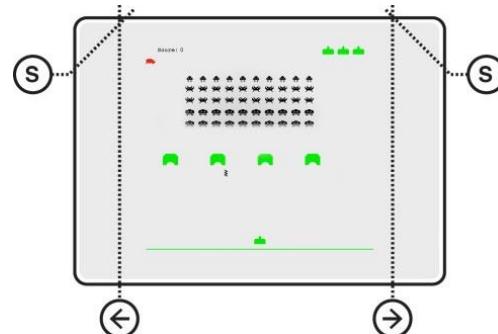
PONG



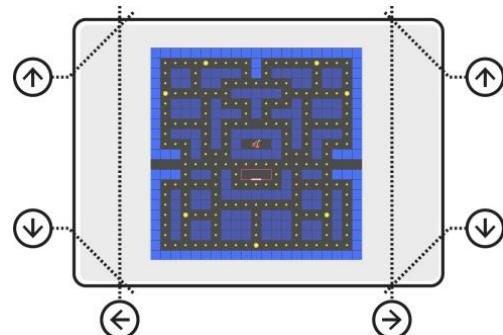
BRICKS



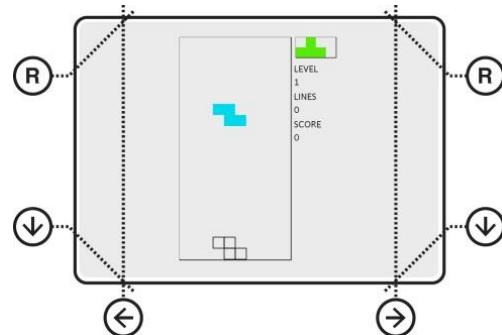
SPACE INVADERS



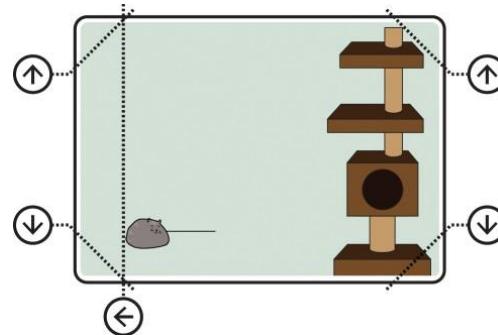
PACMAN



TETRIS



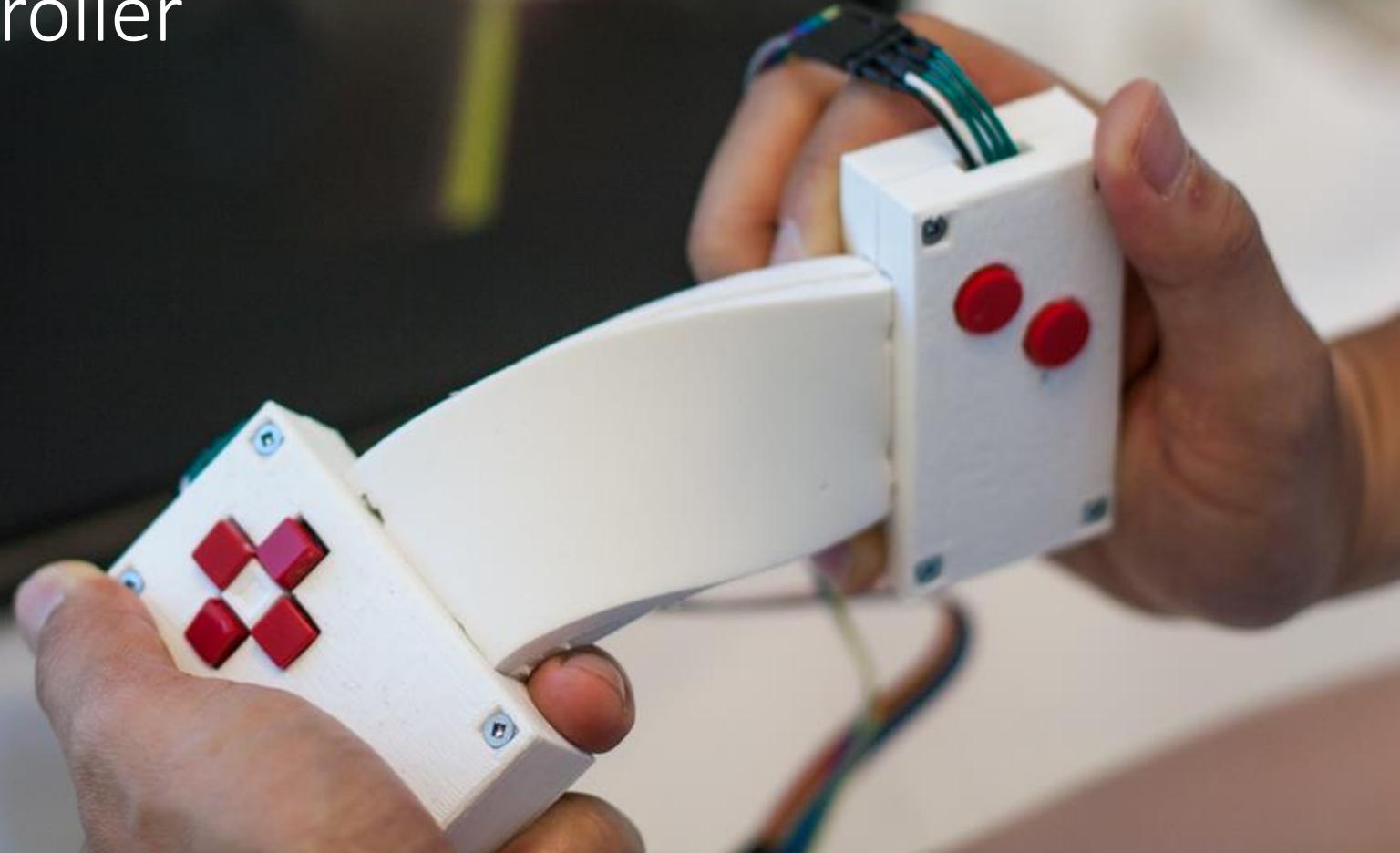
FAT CATS

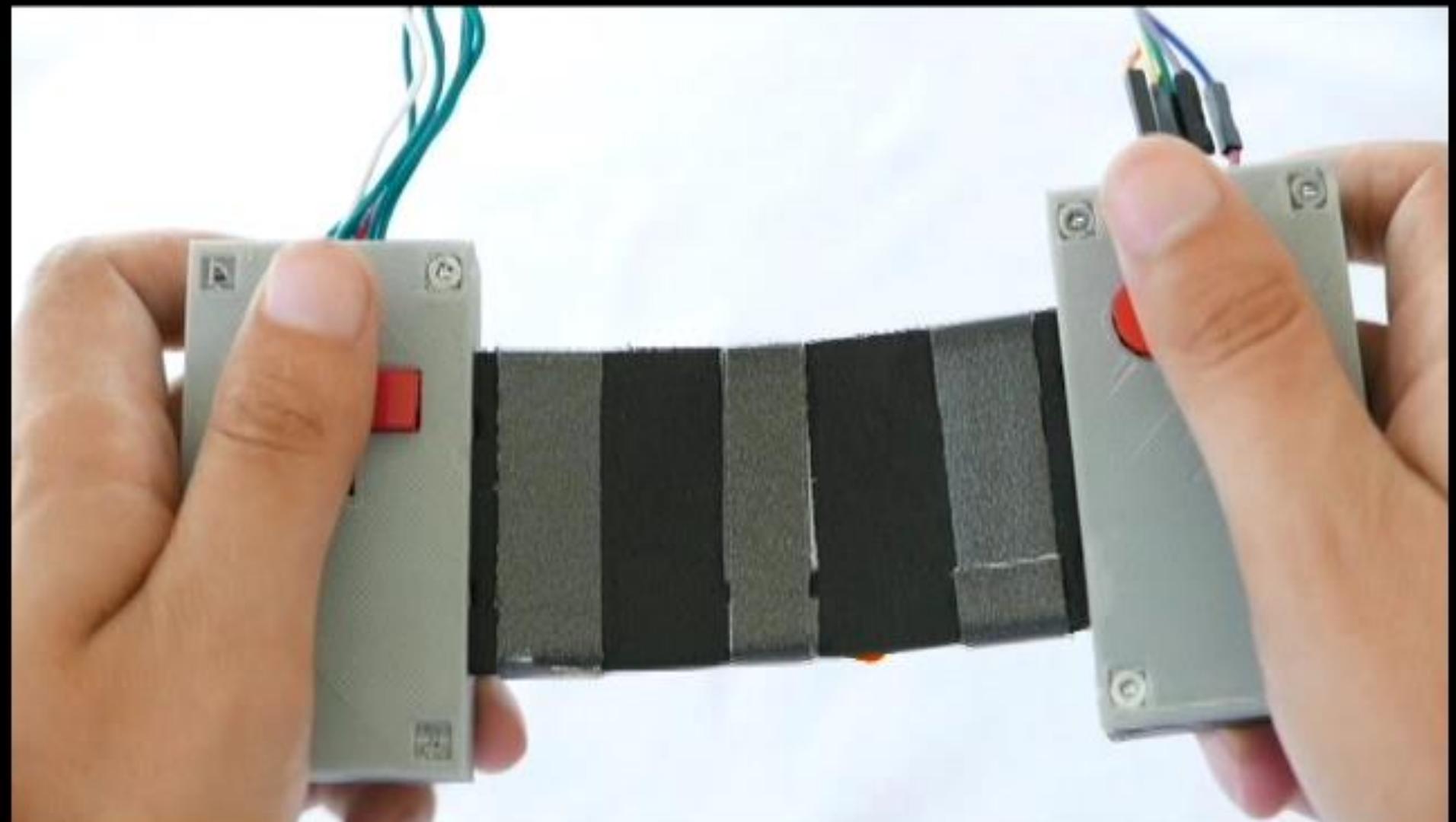


Get ready!



# Bendtroller

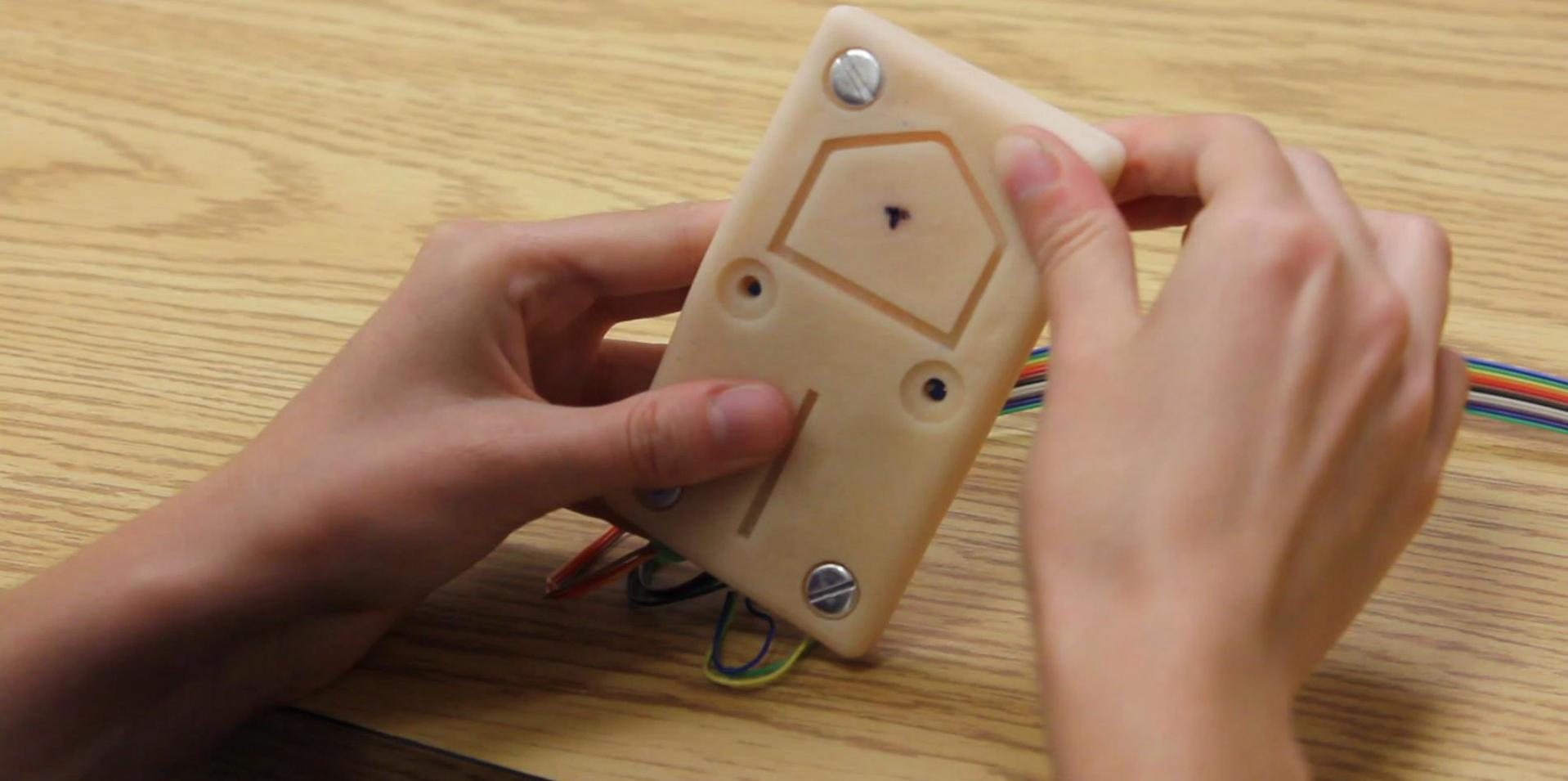


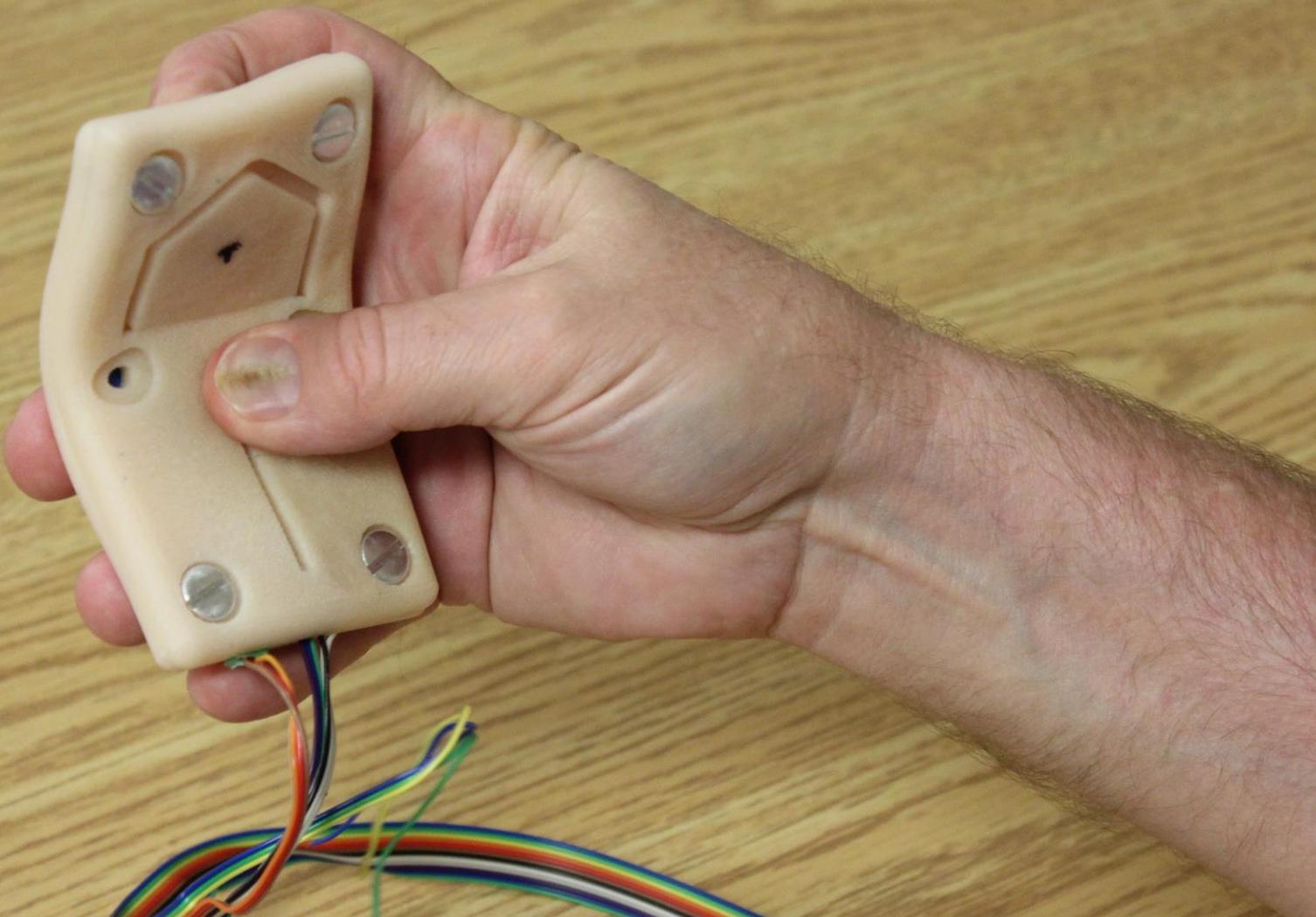


# Typhlex:

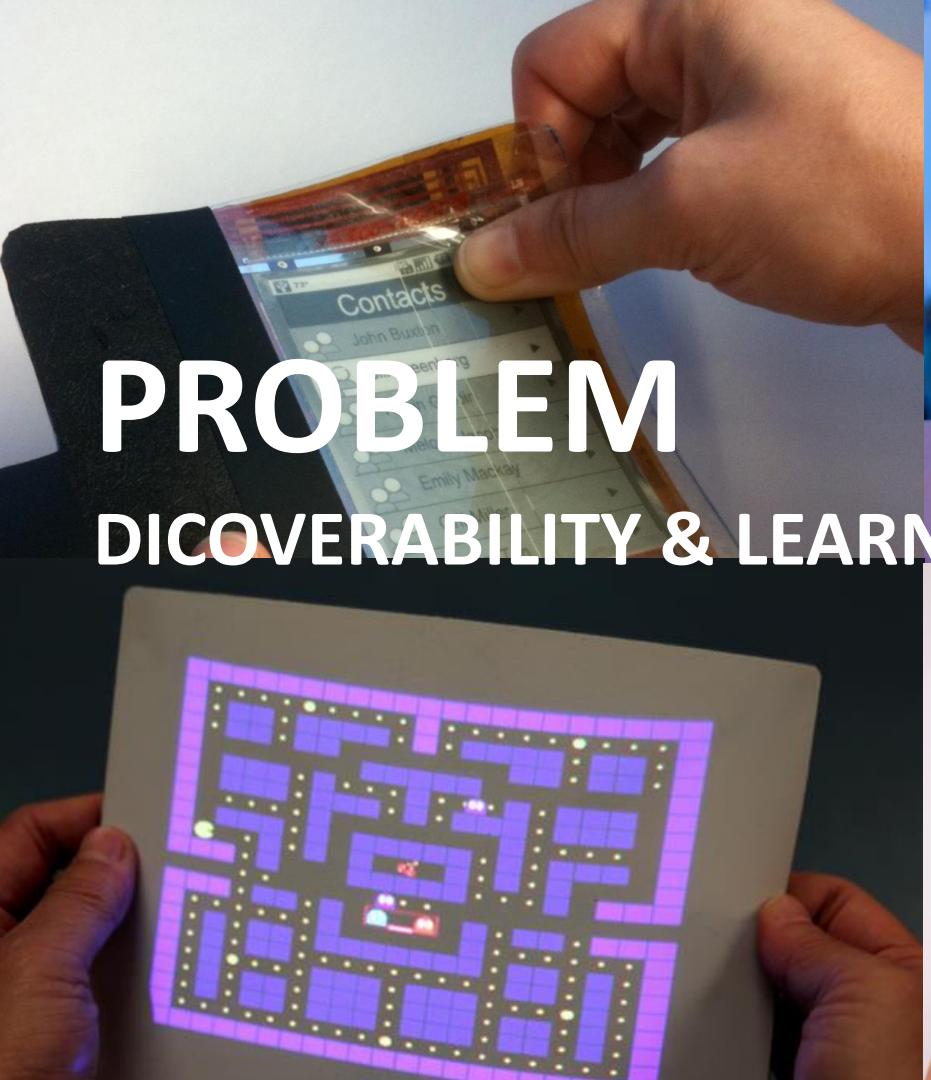
Deformable Input for Blind Users in Controlling a  
Mobile Screen Reader



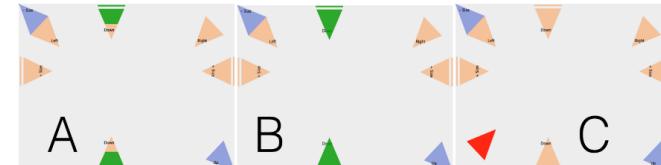
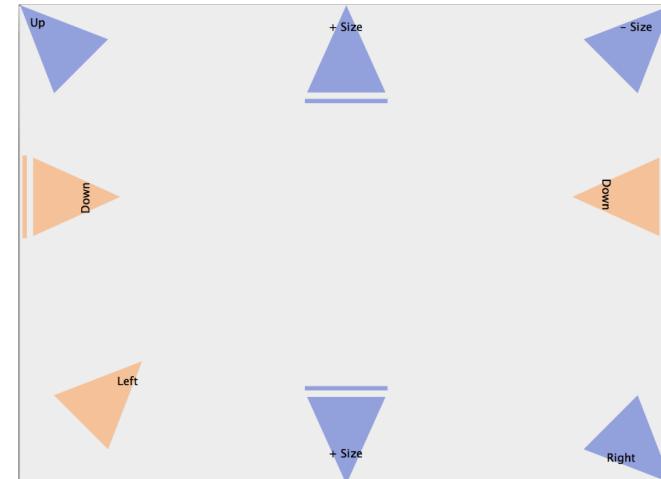
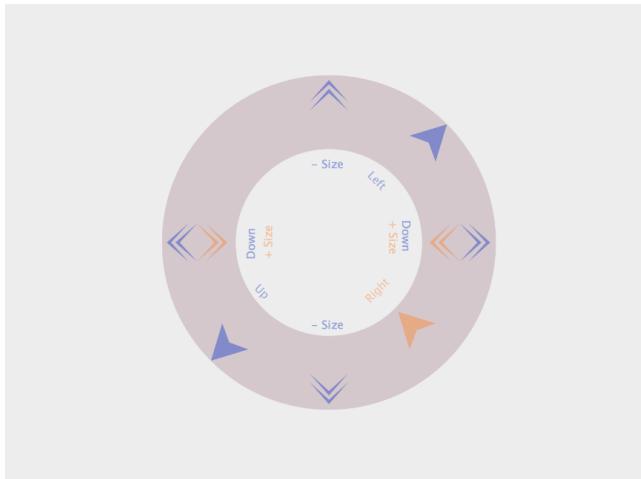




# PROBLEM DISCOVERABILITY & LEARNABILITY OF BEND GESTURES



# Visual guides to performing bends

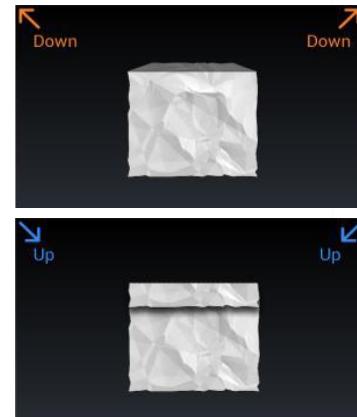


# Types of Training

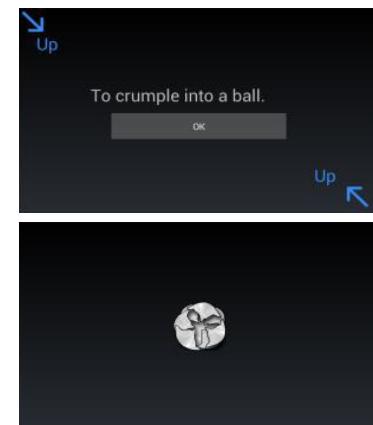
No Training



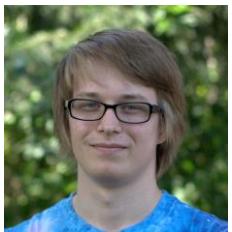
Gestures-Only



Gestures &  
In-Game Mapping



Can flexible displays and deformable interactions improve how we interact with our devices?



# Creative Interactions Lab

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