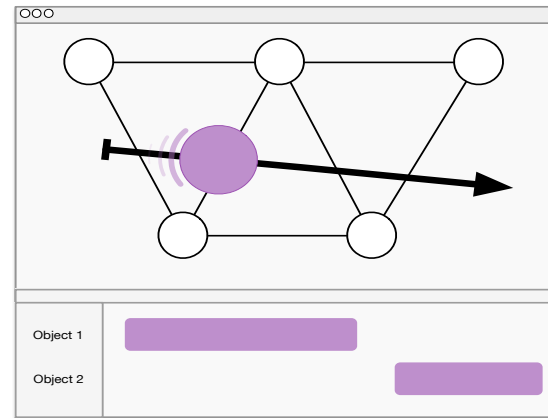


Sketch: Haptic Instrument



Refine: Tactile Animation



Browse: Macaron

Who	Haptician-Proxies <i>(researchers with some haptics experience)</i>	Animators <i>(visual designers who would be hapticians)</i>	End-users <i>(people with and without basic media editor experience)</i>
What	Dual Haptuators	Spatial Vibrotactile Pad	Wrist-worn C2 Actuator
How	Real-time, collaborative parameter control	Direct space/time manipulation of animation object	Example-based interaction techniques, logged user actions
Discovery	Good for ad-hoc exploration, collaboration; bad for refinement	Real-time manipulation valuable; animators drew from examples	Open examples directly facilitate design and indirectly scaffold learning for VT design
Platform	Mobile (Android)	Desktop (Python)	Web (JavaScript)