Physical ergonomics for interactive digital signage and kiosk

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CHI 2019 Workshop on
Mid-Air Haptic Interfaces for Interactive Digital Signage and Kiosk
Physical ergonomics is critical for the success of interfaces beyond desktop.
The movement volume is ergonomically non-uniform with no hard physical constraints.
Small changes in the interface lead to large ergonomic effects

[Myroslav Bachynskyi]
Depending on the movement region different muscle groups are recruited.

[Bachynskyi et al. ToCHI’15]
Comparative study of interaction with various touch surfaces

Tablet

Smartphone 2 hands

Smartphone 1 hand

Laptop

Tabletop

Public Display

[Bachynskyi et al. CHI’15]
Biomechanical simulation extracts multiple physical ergonomics indices

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[Bachynskyi et al. CHI’15]

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Up to 80% differences in Total muscle usage, concentrated in shoulder muscles

[Myroslav Bachynskyi]

[Bachynskyi et al. CHI’15]
Thank you