Human Skills and the Evolving Human-Machine Systems

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- Founder and CEO, iCueMotion, San Francisco
- PI, International Computer Science Institute, Berkeley

Tenured Faculty Univ. of Minnesota (2006-16); PhD, Carnegie Mellon Univ. (2001); Eng. Dipl. ETH (1996)

Academic Research Experience & Interests

- Analysis and modeling of human movement skill in challenging domains
- System-wide integration of motor control, perception and cognitive functions

Application Domains:

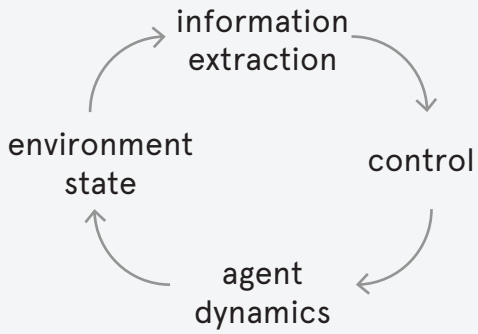
Vehicle operations

Surgery

Sports

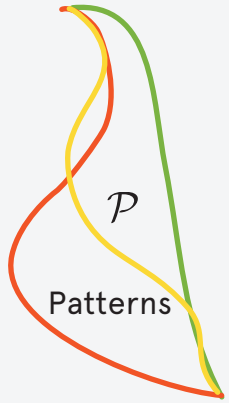
Dynamics of Interaction

Agent-environment interactions



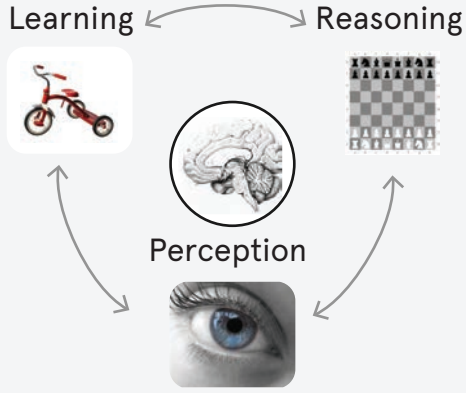
Emergent Organization

Symmetries, invariants



Functional Properties

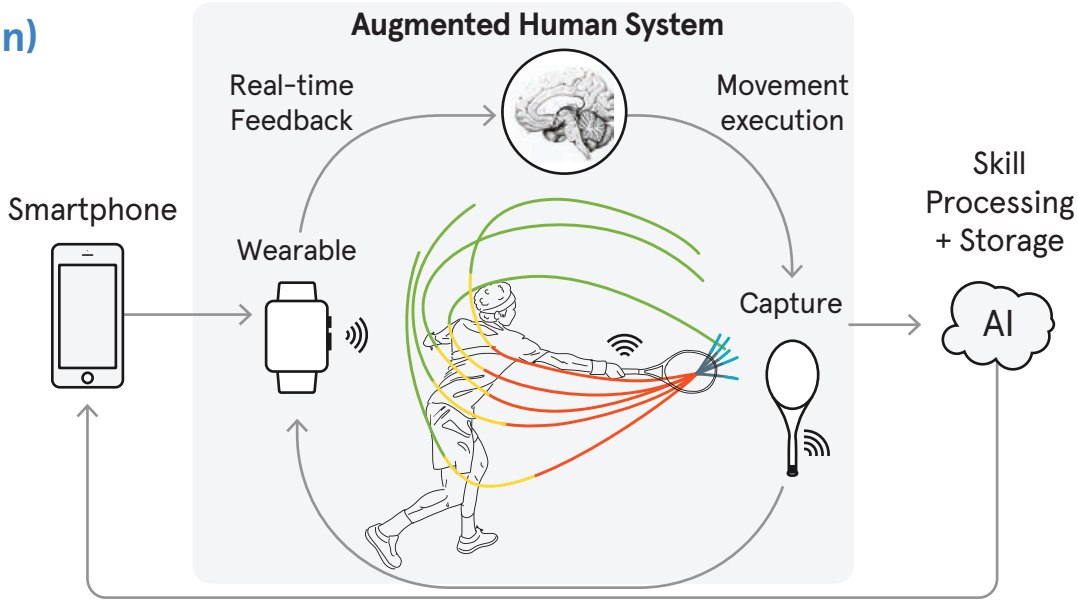
Abstraction and conceptualization



Industrial/Commercial Applications (iCueMotion)

Movement learning and rehabilitation technology:

-Build on the brain's natural learning mechanisms
-Exploit ecological principles of spatial behavior
-Leverage IoT infrastructures

Approach:

-Combines machine learning (pattern analysis) and feedback control
-Encode feedback in natural sensory signals (sound, visual, tactile)
-Integrates into activities,...