



Workshop on Reliable Autonomy for Human Cyber Physical Systems

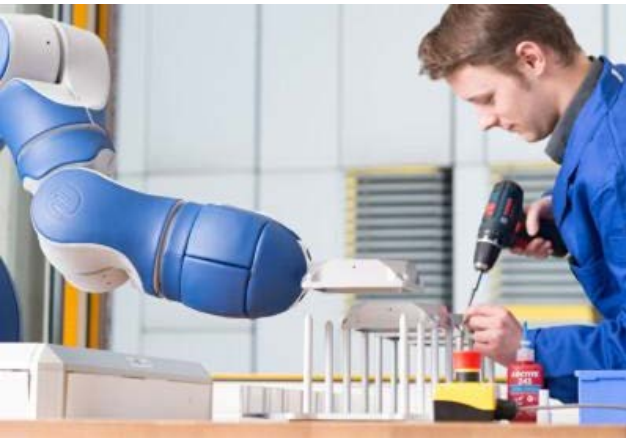


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Disruptive HCPS-enabled technologies

Naïve users can become experts

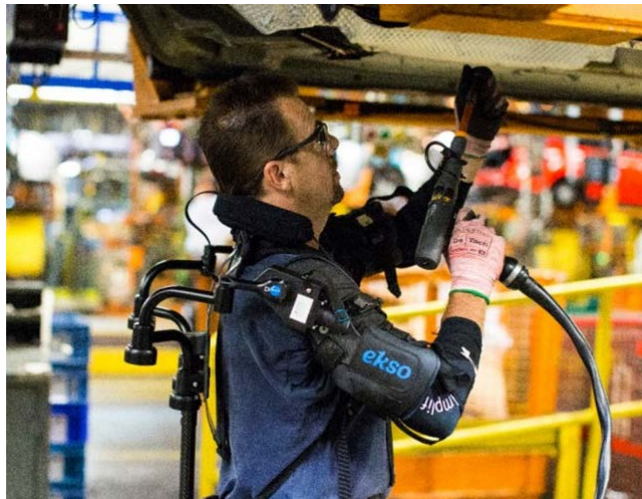
- *manufacturing*: decrease training cost / time; lower barrier-to-entry / increase innovation of entrepreneurs
- *public safety*: save us from imminent urban air mobility catastrophe (private drones, flying cars, internet blimps)



Disruptive HCPS-enabled technologies

Assistive and augmentative devices

- *care for elderly and disabled*: enable individuals to maintain quality-of-life through aging, disease, trauma
- *personal safety and ability*: move point-of-care for emergency medicine; amplify human sensorimotor system



Disruptive HCPS-enabled technologies

Resilient societal-scale cyber-physical infrastructure

- *disaster response*: coordinate services for people and critical infrastructure,
- *environmental safety*: ensure clean air, water, other resources



Reliable Autonomy for Human Cyber Physical Systems

Humans & Robots

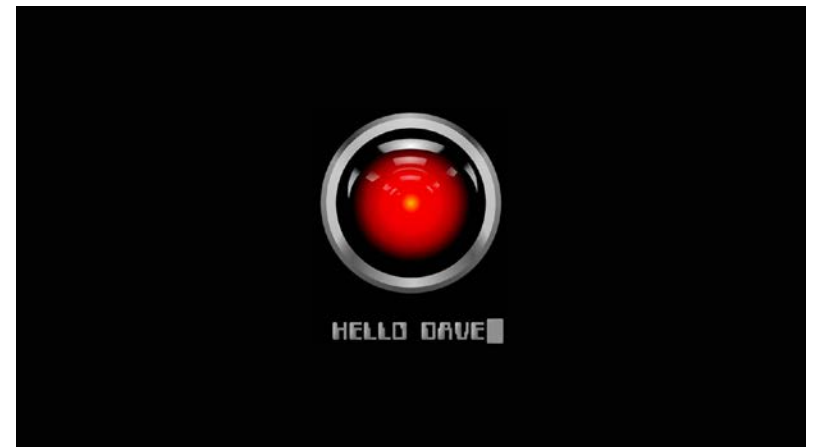
- Context dependence
- Abstractions for suitable computability
- Adaptation and communication for improved consensus
- Trust should not be an afterthought

Humans & Methods

- Verification that embraces the intrinsic uncertainty
- Synthesis for collaborative and shared control
- Data is an opportunity
- Verification of what?

Humans & Models

- Intersection of human factors, HCPS, behavioral economics?
- “black swan” / unmodeled human behavior
- Fuse sensor data: mechanical, biometric, neural, aural, ...



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