Toward Human-Magic Interaction
Interfacing Biological, Tangible, and Cultural Technology

What are we doing?
We present a framework for human-magic interaction, which defines emerging interfaces as forms of ‘Magic’ emphasizing the seamless interaction between humans and different technological mediums.

Emerging Technological Interfaces
Biology Interfaces
- Allow humans to interact with natural things (living and non-living) as design materials. This includes biological materials that are computable through digital interfaces, living organisms used as sensors, or devices embedded into human skin to respond to biochemical information within bodily fluids.

Tangible Interfaces
- Incorporate physical objects as part of a digital interactive system, moving beyond traditional display devices. This includes shape-changing devices and the use of everyday objects as interactive design materials. The connectivity between tangible objects and the digital network “Internet of Things” allows them to change and respond to the environment.

Cultural & Critical Interfaces
- Consider both the global and personal effects that digital interfaces have on our values, beliefs, assumptions, and social relations as a society. This includes digitally mediated cultures where humans interact through social media platforms, augmented reality, online communities, chatbot versions of the deceased, or real-time facial reenactment software.

Framework for a New Ecology of Interactive Systems
Human-Computer Interaction
- Expansive Human-Computer Interaction
Human-Magic Interaction

Speculative Technologies for Human-Magic Interaction
I. Genie Machine
- Inspired by the character Genie from Aladdin, the Genie Machine resembles an intelligent assistant that can complete tasks on behalf of a human. The language processing unit allows voice commands to be converted into actions. We speculate that future assistive agents will be embedded in wearable technology, which can work across biological, tangible, and cultural domains, extending the assistive capabilities beyond the digital realm.

II. Pumpkin Machine
- Inspired by the Pumpkin Coach in Cinderella, we speculate that in the future we can modify biological objects into any shape and form that has a specific function. This machine would include programmable material that can transform into a vehicle-shaped mold for pumpkins to grow into. This technology is at the intersection of interactive material and biological augmentation, which can be used to decentralize access to an object that is normally only available to people of certain socioeconomic stauts.

III. Pinocchio Machine
- Inspired by the character Pinocchio, known for having a nose that grows longer when he is lying, this wearable interface responds to biological and cultural constructions. It allows humans to have part of their body become an interface for self-awareness. It also visualizes the bio-political tensions between social constructs and individuality by demonstrating how the body can be altered if it doesn’t conform with society.

As the boundaries of human and machine continue to dissolve at an ever-increasing rate, what magic will you create?