

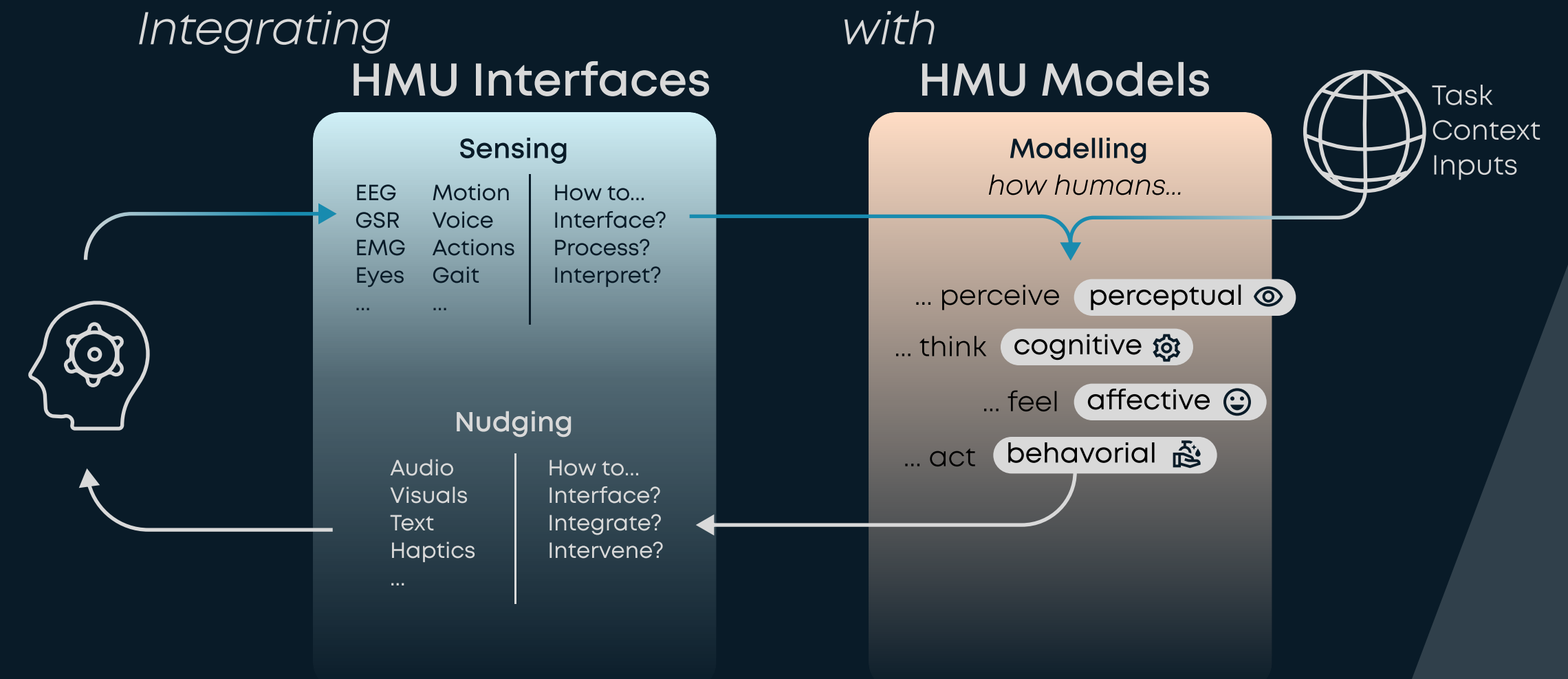
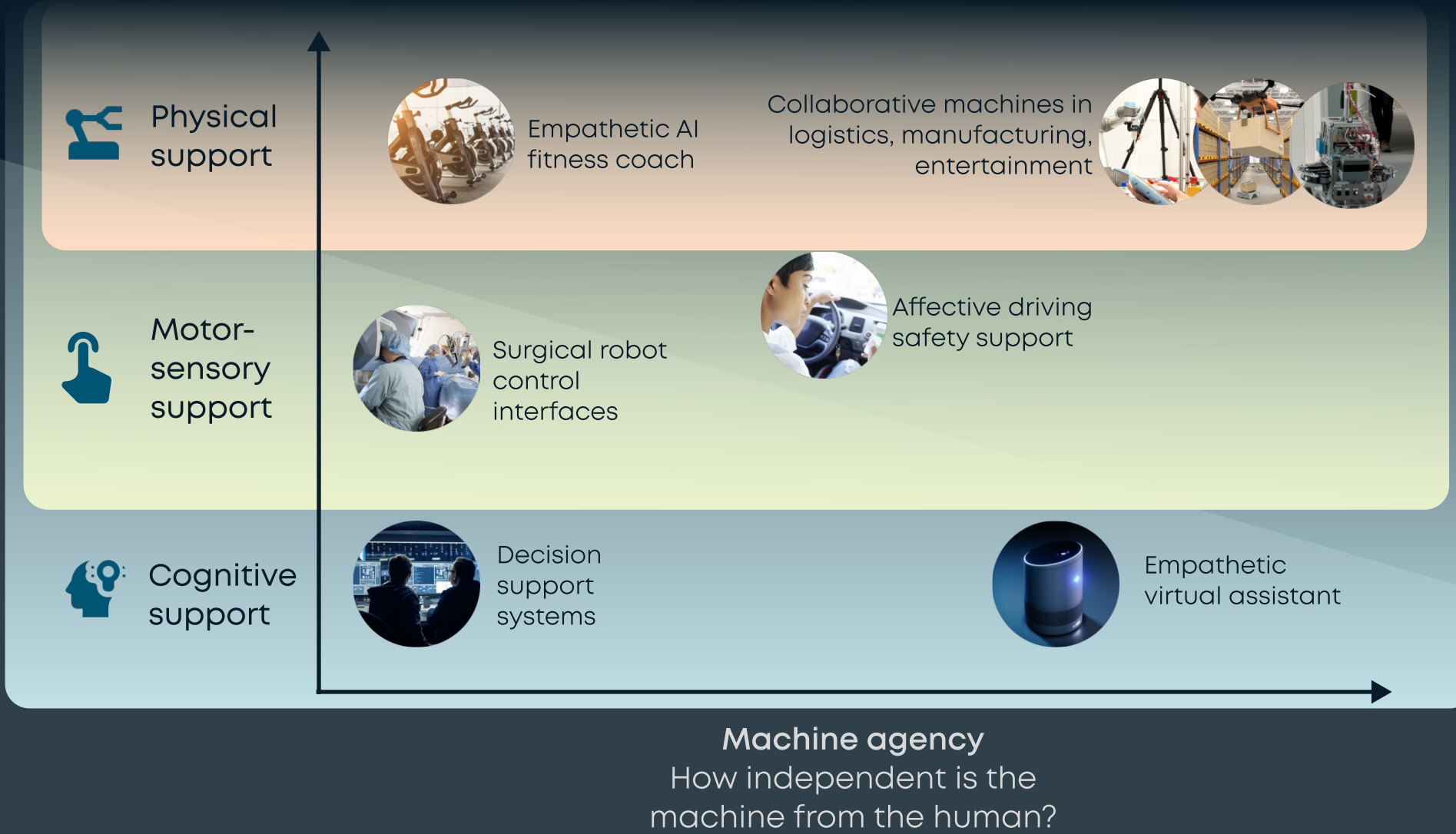
Our future challenges require an interdisciplinary approach to combine insights from different fields

Machines are evolving rapidly and we increasingly interact with them across personal, professional and societal realms. Efficient interaction requires mutual understanding, but this is currently one-sided. At Cambridge Consultants, we are working on some of the first machines that truly understand humans and can adapt to us in real time, whether as direct collaborators, team mediators, decision supporters, autonomous agents or indirect enablers for improving behaviours. **We call this Human-Machine Understanding (HMU).**

We draw insights from AI, affective computing, cognitive sciences, neuroscience, and psychology to build these systems – empathetic systems with applications on a factory floor to boost productivity, at theme parks to deliver unique experiences, at hospitals to better patient lives, and even in critical situations where humans alone would struggle. These systems might be embodied in a robot or enacted through interfaces like AR, VR, voice, wearables - we have a broad capability in interaction design which is not limited to traditional interfaces.

A core tenet of our capability is the focus on trust. We do not simply build trustworthiness as an afterthought into human-machine interfaces but consider it as a core part of our approach from the start, to ensure successful human adoption of technology. We research what allows humans to team with other entities, trust the team as a whole, and succeed in their task whilst ensuring the safety and wellbeing of those involved. Our concept development approach involves close collaboration with users or proxies where appropriate.

Our expertise spans a variety of human-machine interaction paradigms



Some example past or present projects include...

- Linking the behavior of OCD sufferers with cognitive models & designing alleviating interventions
- Developing systems that capture and model human cognition in critical decision-making
- Applying behavioural science to digital app UX design to enable behaviour change

Human-Machine Understanding

Cognitive Science | Behavioral Science | Computer Science