



Embedding high-resolution touch across robotic hands enables adaptive human-like grasping

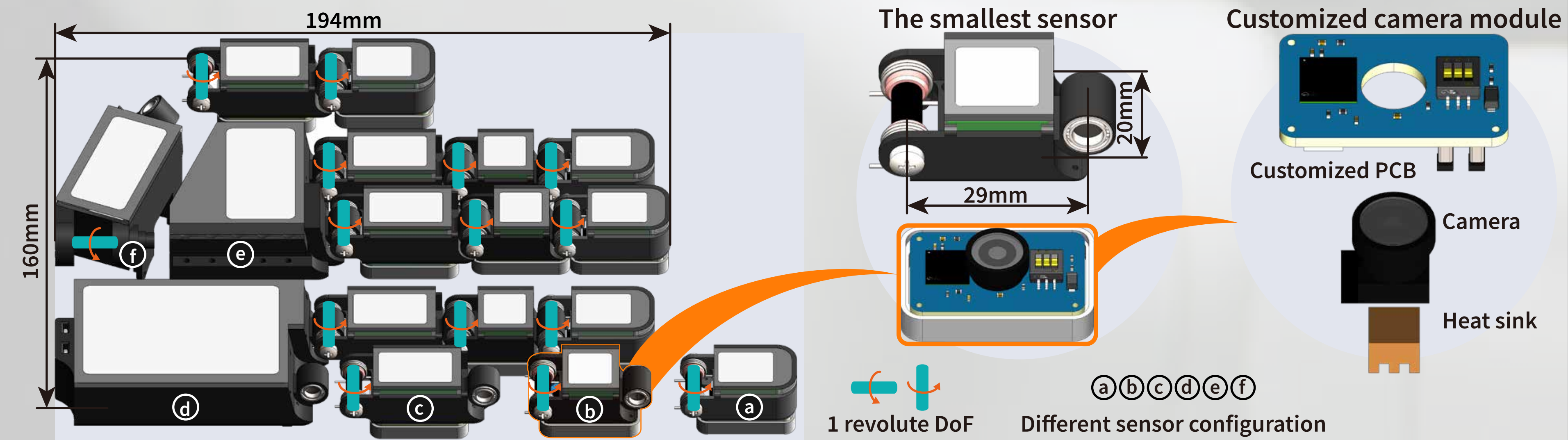
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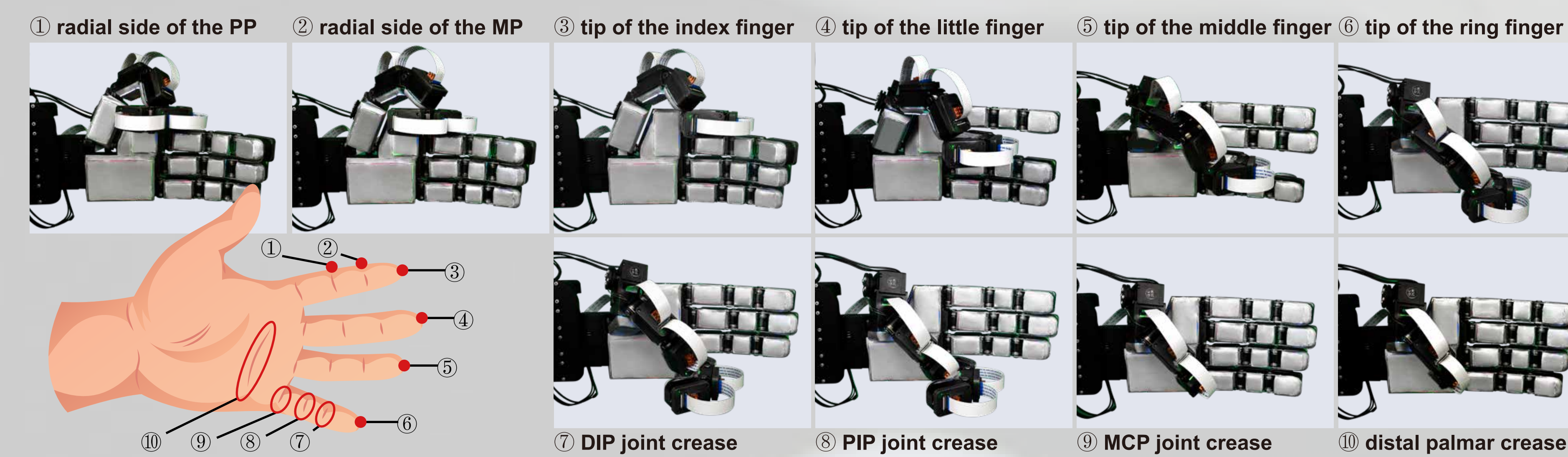
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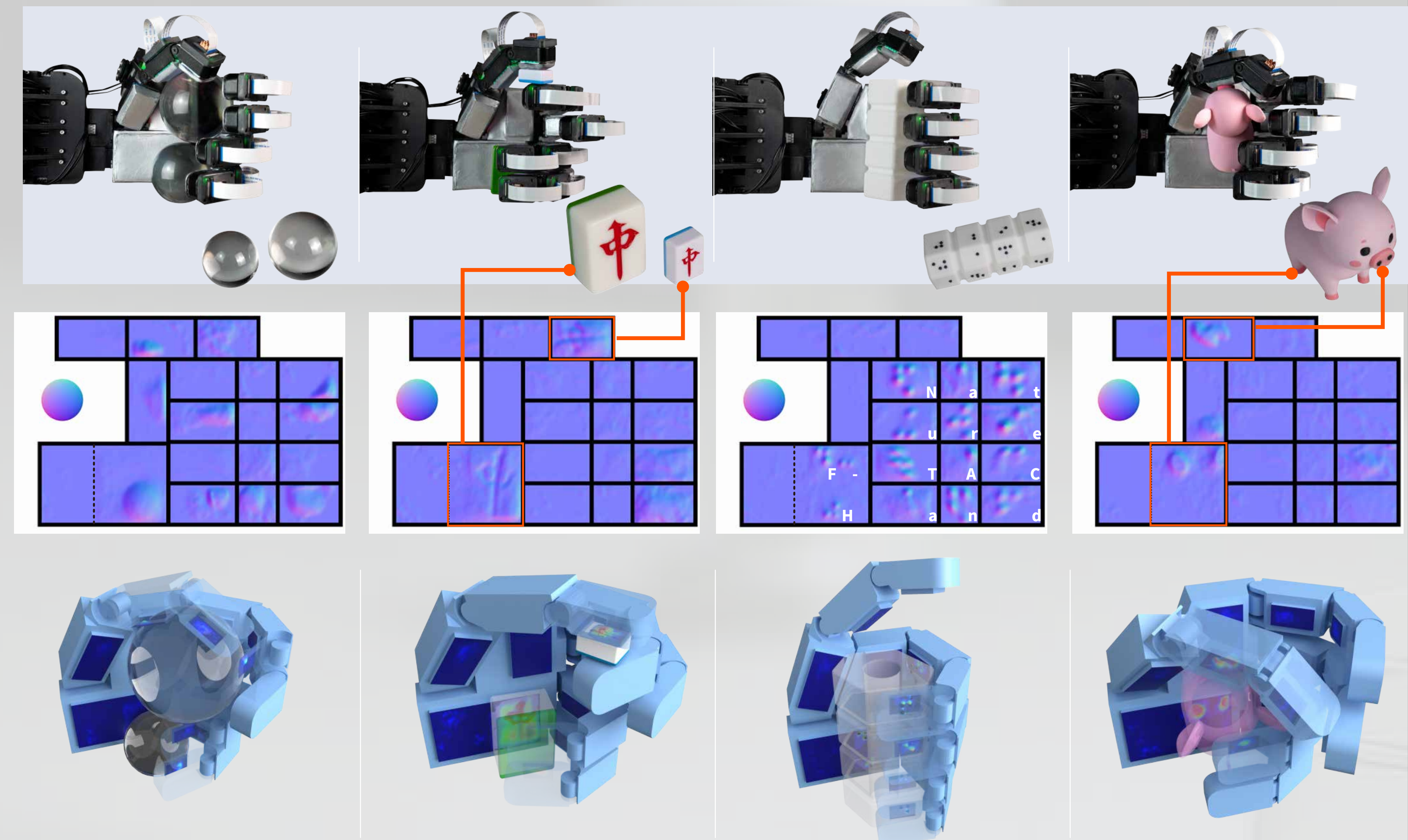
- **Human-like mobility with high-resolution touch – Empowers ➤**



F-TAC Hand seamlessly integrates 17 vision-based sensors in six configurations, maintaining 15 DoFs and adult hand dimensions.

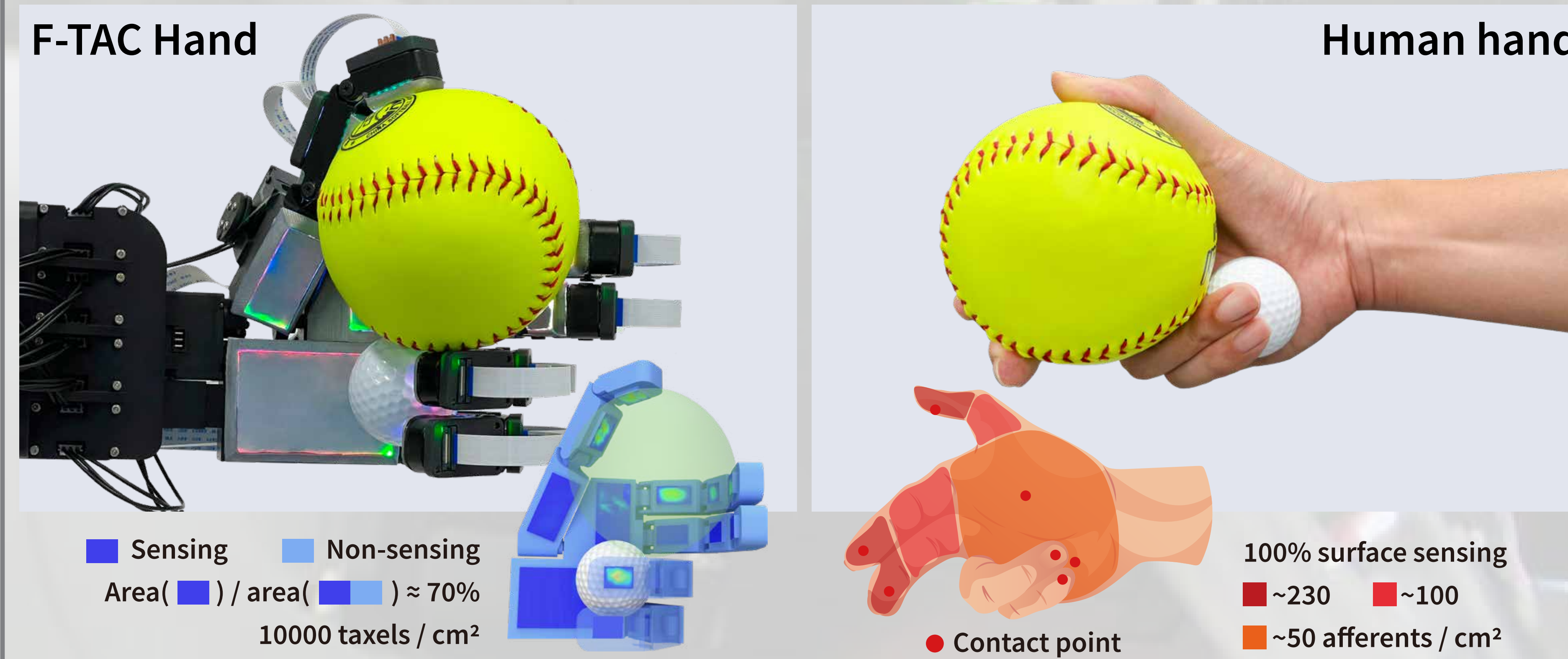


Empowered by its smart design, the F-TAC Hand retains full mobility despite its numerous sensors, successfully completing all Kapandji tests.



When grasping an object, F-TAC Hand captures detailed contact information, enabling it to accurately interpret object characteristics, such as precise in-hand object pose estimate.

- **First biomimetic hand with human-level tactile embodiment**

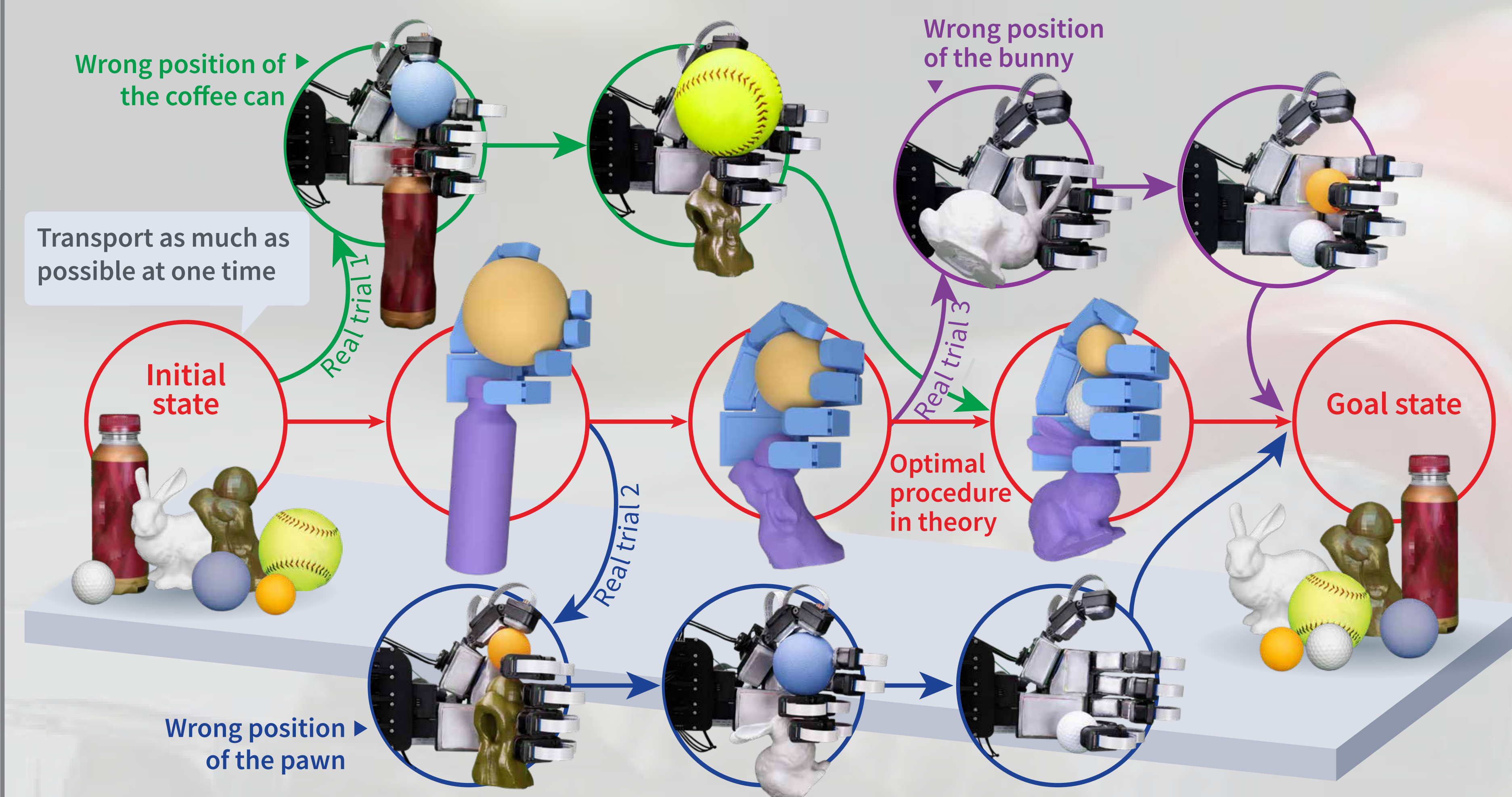


F-TAC Hand is a dexterous robotic hand (15 DoFs) featuring a high-density tactile sensing array (70% coverage with 0.1 mm spatial resolution) that matches human capabilities.

- **Adaptive human-like grasping**

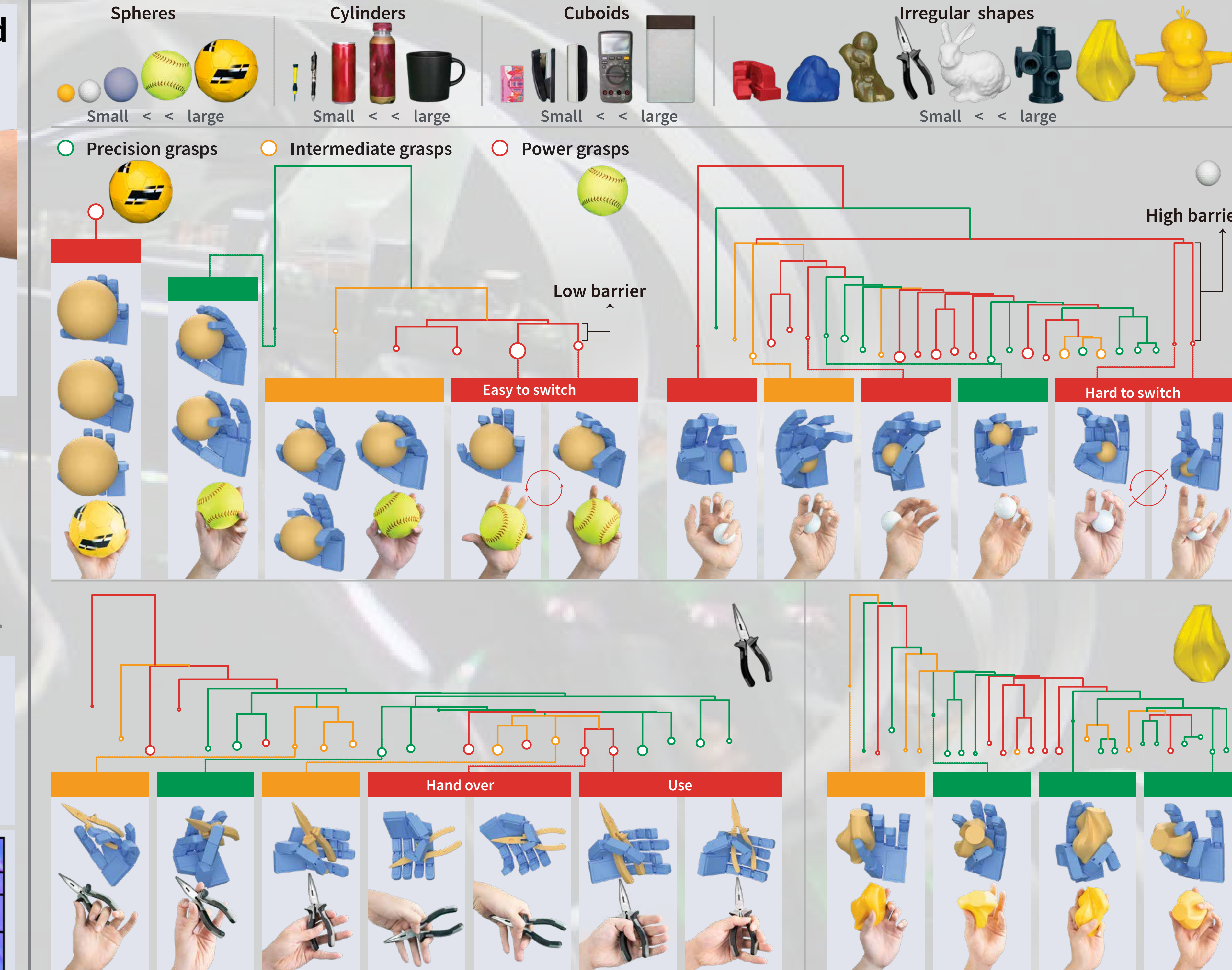


F-TAC Hand's ability to grasp multiple objects simultaneously in a human-like manner.

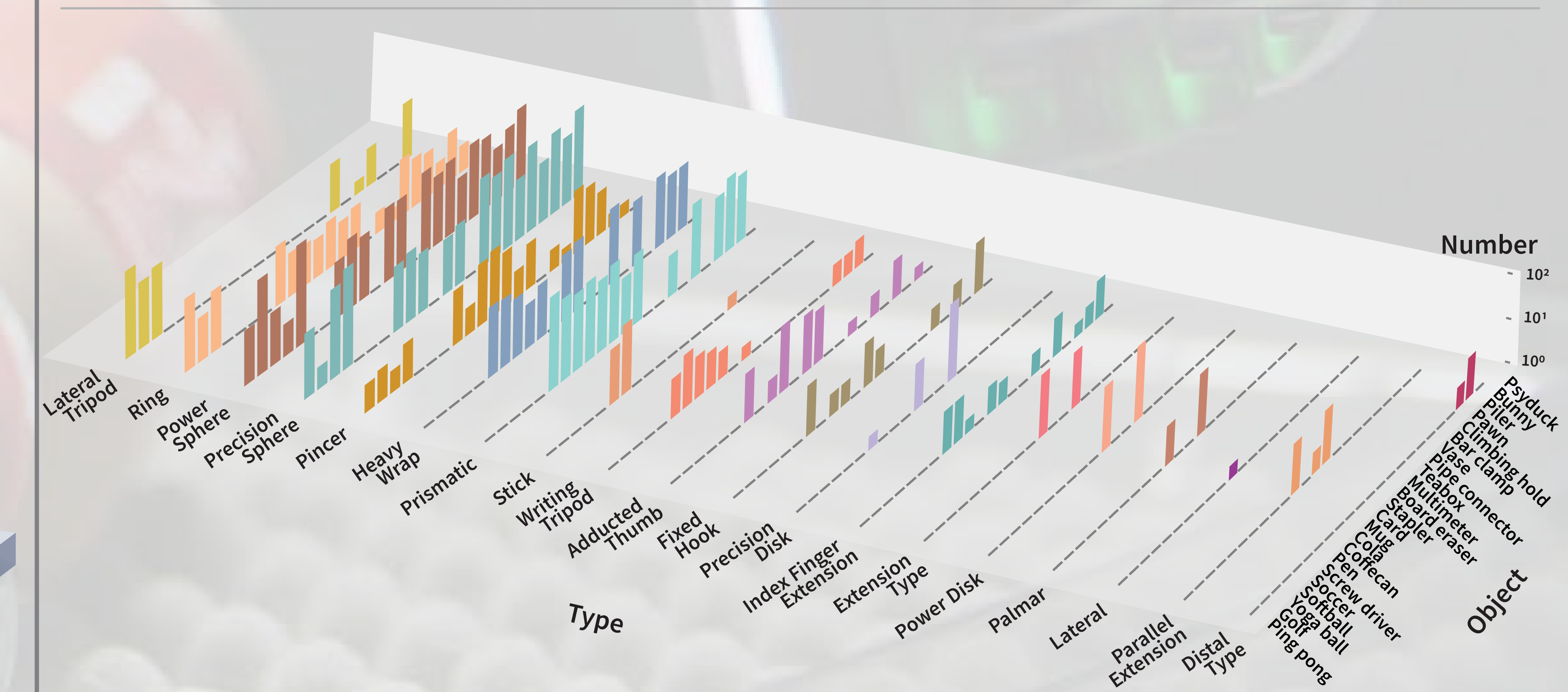


Despite execution noise, F-TAC Hand can optimize object transport through multi-object grasping through the tactile-informed adaptive motor control.

← Empowers — Human-like diverse grasping



To control the highly articulated hand, we model grasp generation for rigid objects as sampling hand poses from a Gibbs distribution, enabling human-like grasp diversity.



These results collectively cover all 19 common grasp types and, together with the low-level controller, enable enhanced dexterity and adaptability.