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- Keywords Robotics, Motion capture, Wearable, Tactile, Underwater

Research Vision

Human-Level Dexterity in Robots through Wearables, Tactile sensors, and Haptics to replace human labor-intensive, manual process with robotic automation



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Dexterous Motion

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Tactile Sensing

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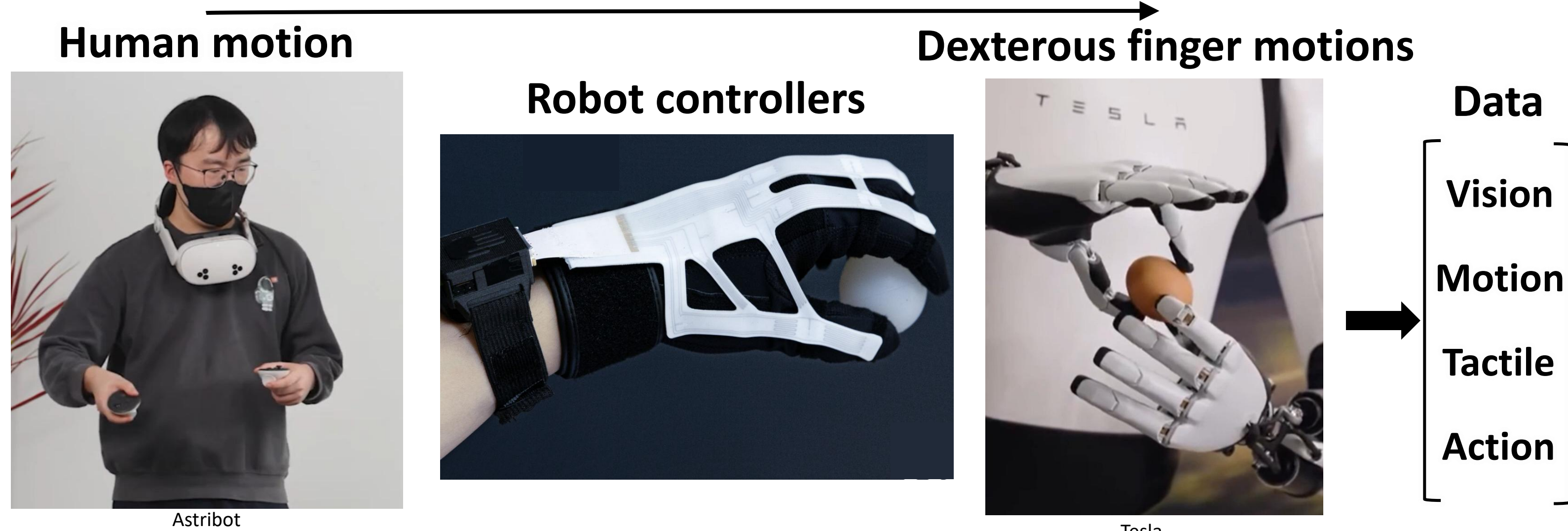
Contact-Rich Manipulation

Key Technical Challenges

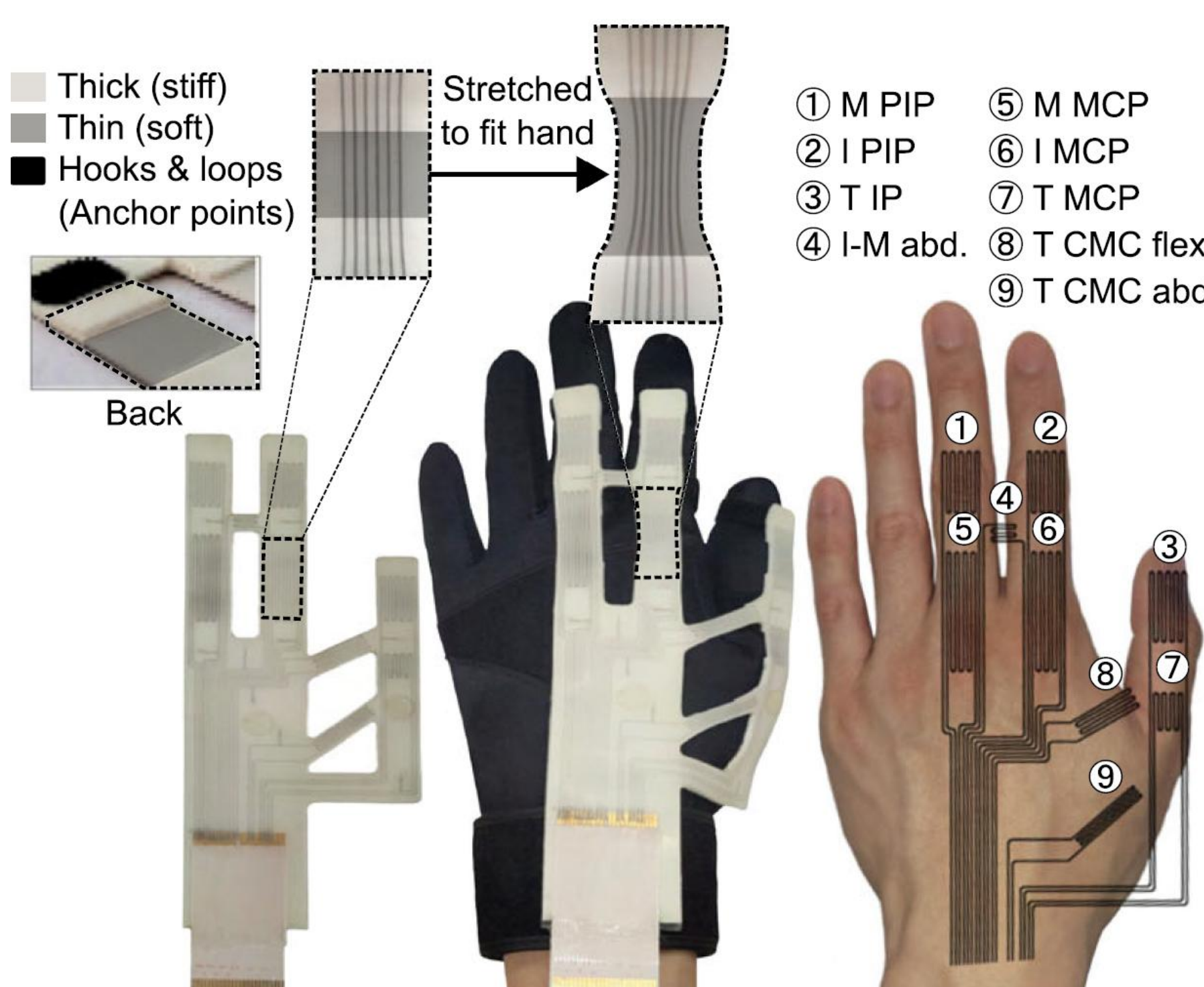
Challenge 1: Collecting dexterous hand motion data [5,7]

Challenge 2: Reproducing sensing capabilities [1,2,3,6]

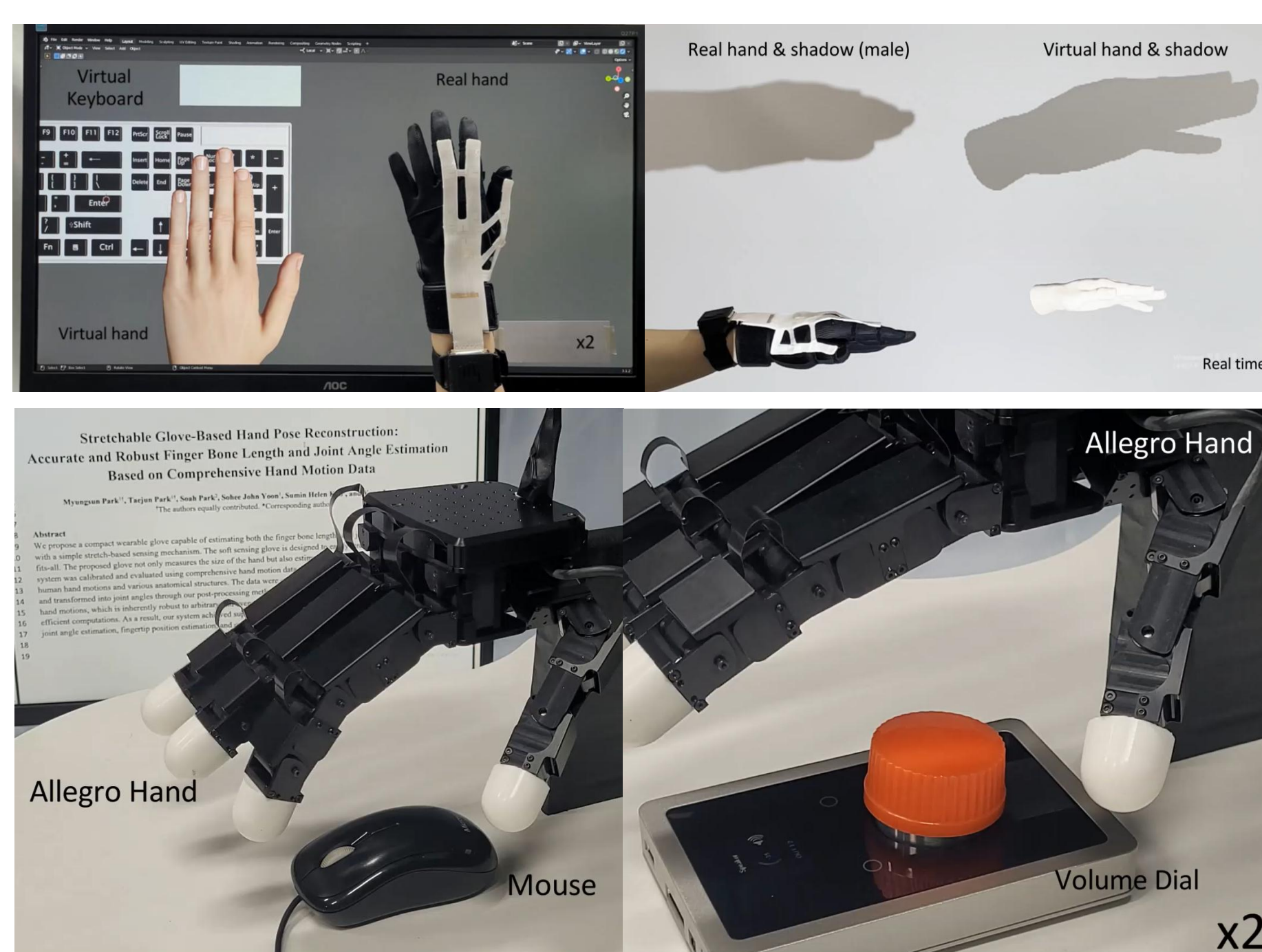
Teleoperation



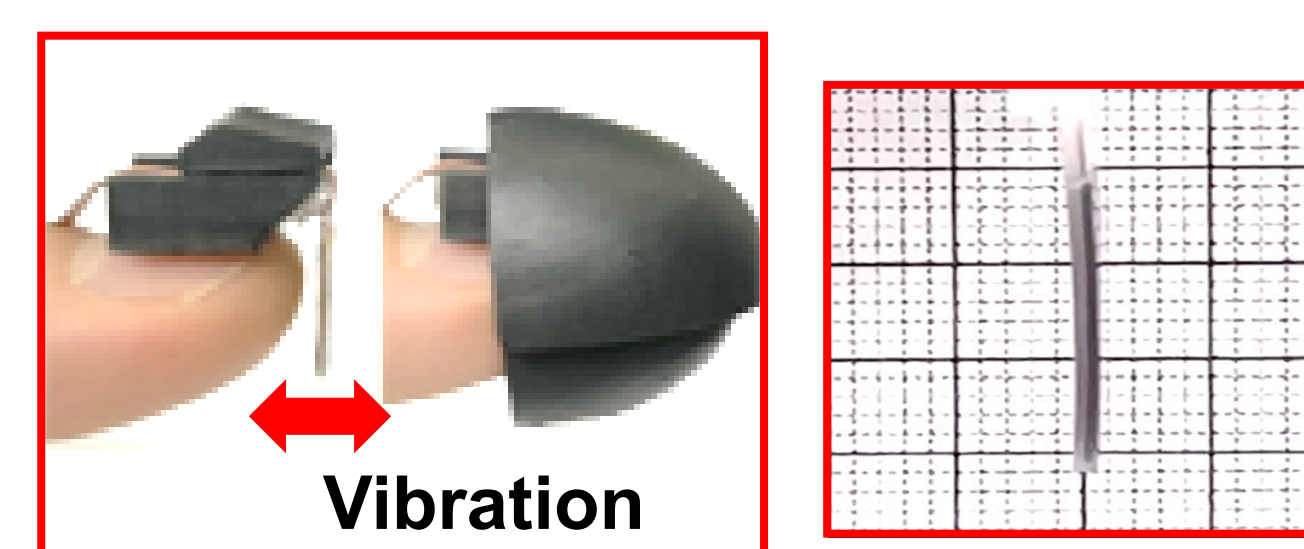
Wearable motion-tracking glove



Robot hand control & VR applications



Haptic feedback



Operator (mocap glove)



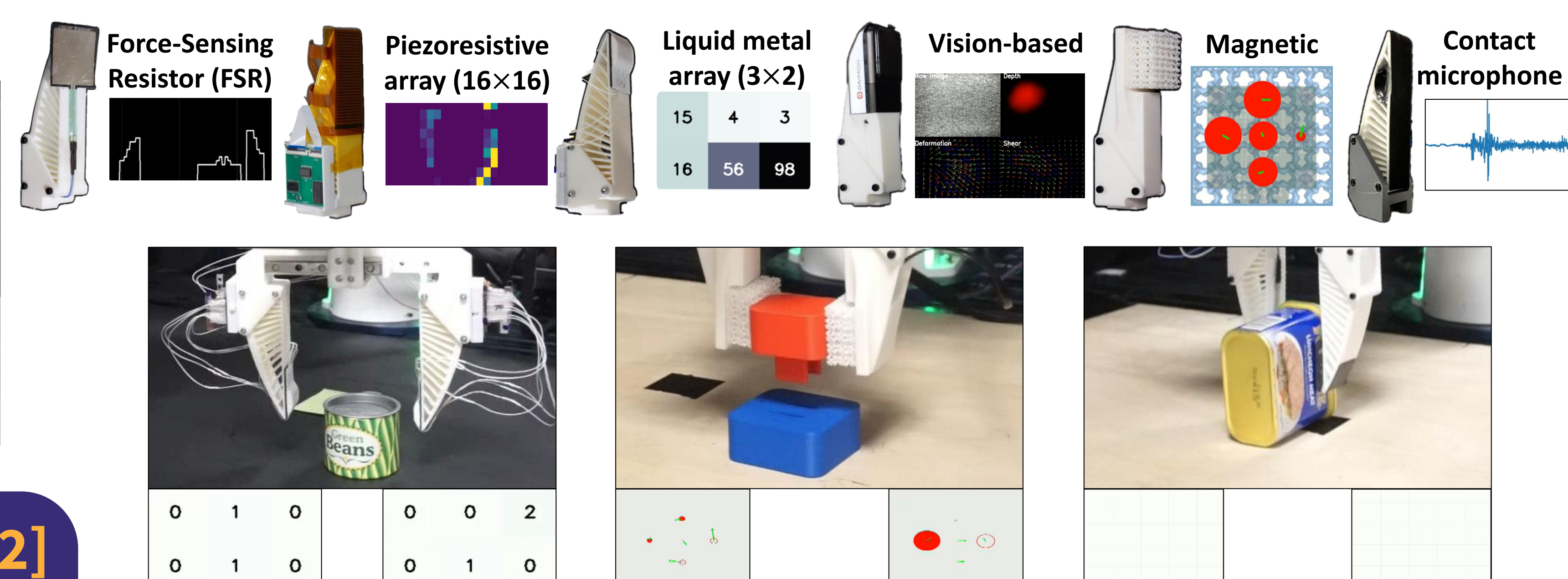
Motion- & tactile-sensing gripper



Miniaturized robotic gripper

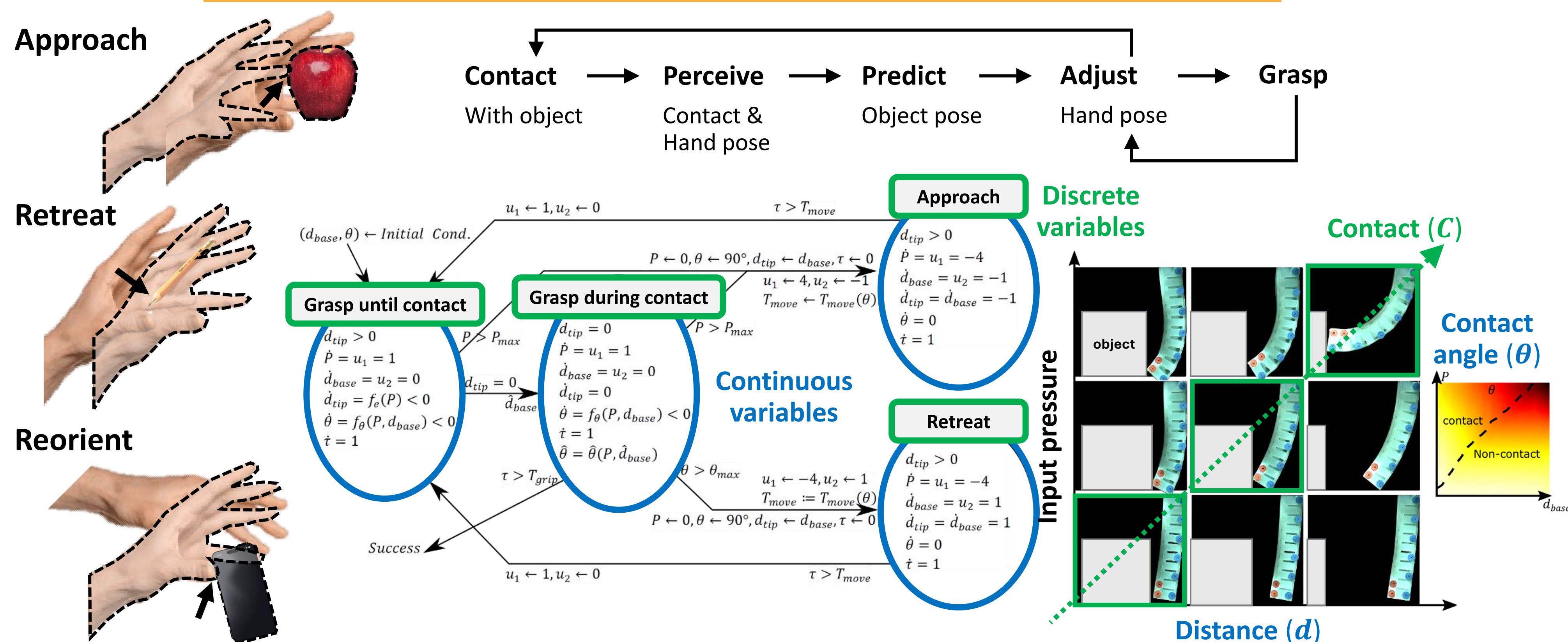


Benchmarking tactile sensors for imitation learning

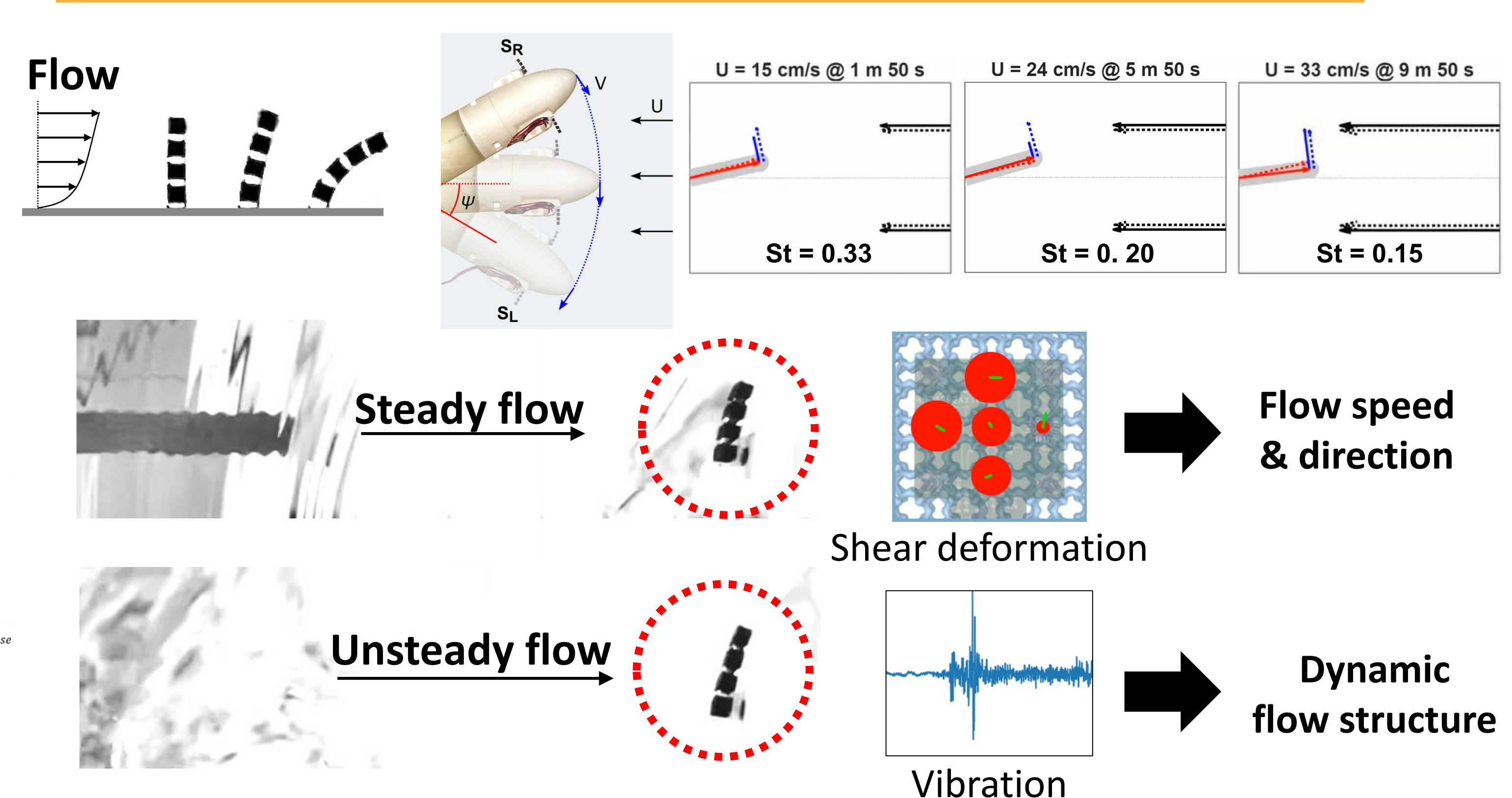


Challenge 3: Control in contact-rich and dynamic systems [11,12]

Modeling human decision-making process for robotic control



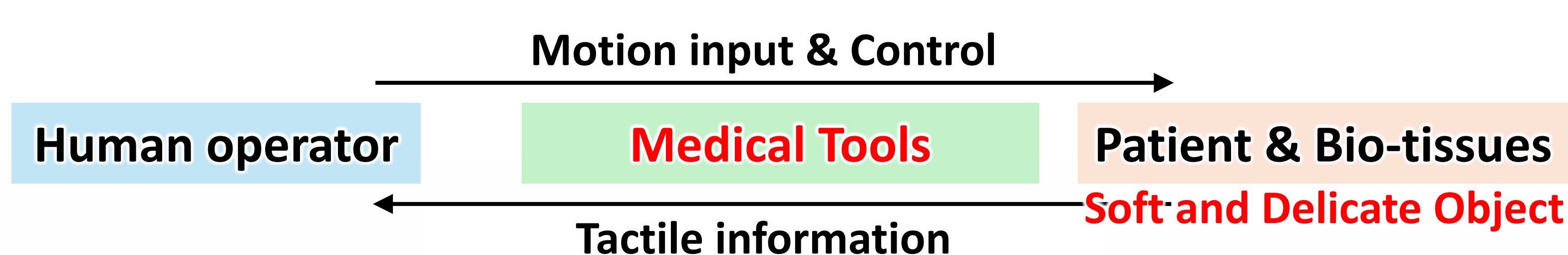
Bioinspired flow sensor for motion- & environment-sensing



Future directions

Publications

- Multi-modal tactile sensors embedded in wearable glove
- Generalizable modeling scheme for complex decision-making process
- Open-sourcing devices for data collection
- Medical robotic applications



- Zorin et al., ArXiv. 2026.
- Park et al., Science Advances. 2026.
- Park et al., ICRA. 2025.
- Jiang et al., RoboSoft. 2025.
- Park et al., Nature Communications. 2024.
- Ham, Park (co-1st) et al., Adv. Mat. Tech. 2023.
- Park et al., Extreme Mechanics Letters. 2023.
- Kwon et al., Advanced Materials Technologies. 2022.
- Kwon et al., Smart Materials and Structures. 2021.
- Kim et al., IEEE T-RO. 2021.
- Park et al., Advanced Intelligent Systems. 2021.
- Jung, Park (co-1st) et al., IEEE RA-L. 2020.
- Park et al., RoboSoft. 2019.

Organizers

