#2132923/2132773: NRI/Collaborative Research: Robotic Disassembly of High-Precision Electronics

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Challenges

- Increasing quantities of discarded high-precision electronics
- Many valuable components are not recycled due to high labor cost
- Disassembly requires high robotic dexterity and accuracy to accomplish

Scientific Impacts

- Addressing the mapping and AI-driven point cloud interpretation for complex surfaces
- Novel lightweight robotic hand design and high-precision manipulation algorithm for flexible disassembly

Solution: A novel robotic system that can accurately _see_, _interpret_, and _disassemble_ high-precision electronics.
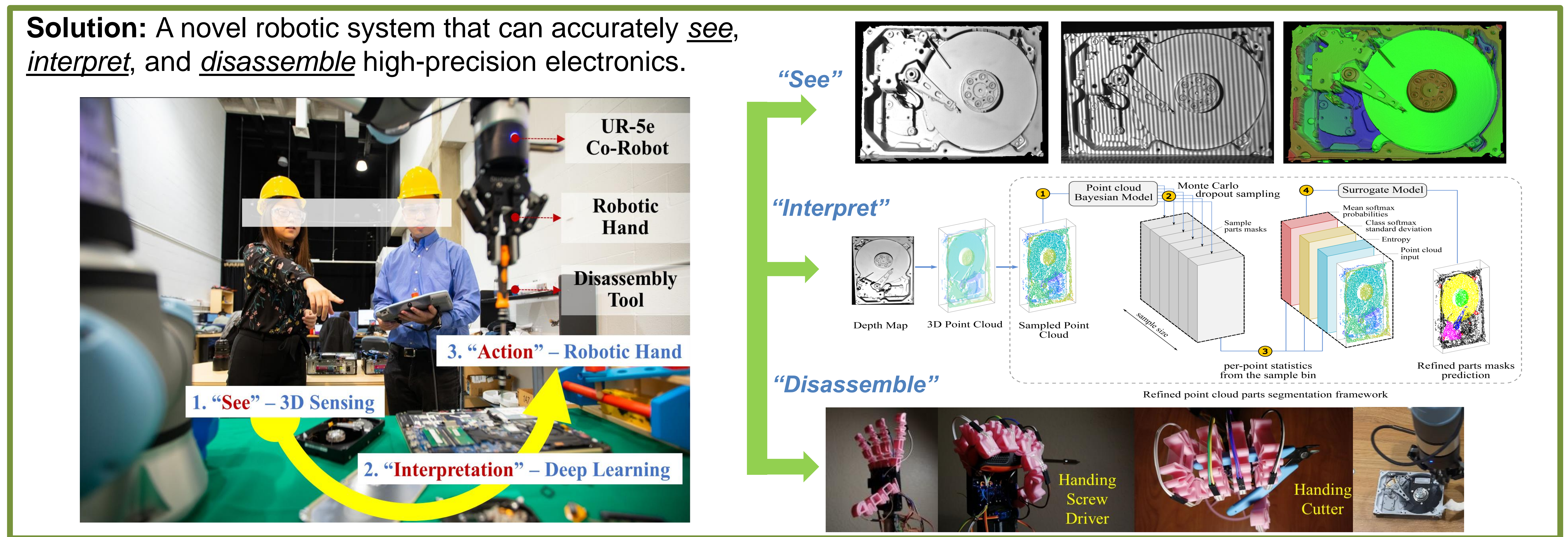
Broader Impacts (Impact on Society)

- Address labor shortages in the recycling industry.
- Reduce waste from discarded electronics.
- Promote environmental and manufacturing sustainability.

Broader Impacts (Education and Outreach)

- Develop new workforce for sensing, AI, and robotics
- Broaden participation, including participation by young people and underrepresented groups