Sketching Geometry and Physics Informed Inference for Mobile Robot Manipulation in Cluttered Scenes #1638060

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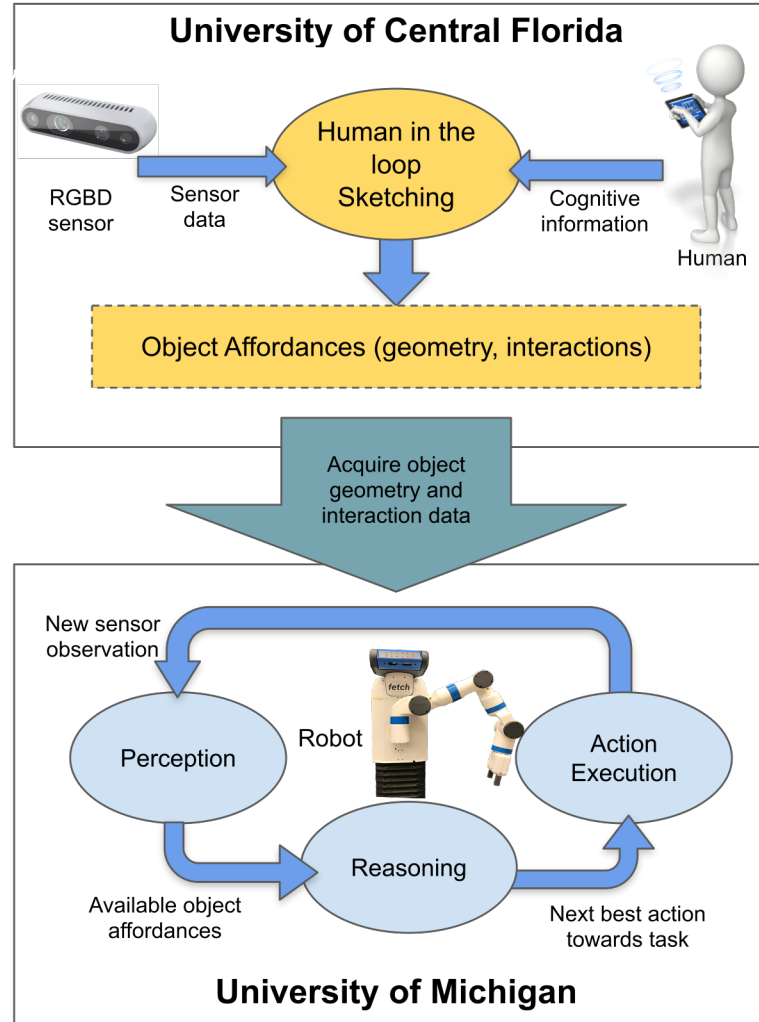
Challenge

- Extracting objects' geometries based on human knowledge
- Manipulating objects using human-in-the-loop approach

Solution

- Sketch-based geometry extraction
- Sketch-based object manipulation using the affordance concept

Impacts

- Performing robotic manipulation tasks in an easy to use UI which requires relatively cheap hardware (a touchscreen tablet).
- Creating affordance templates from sketches creates a platform to build a database of objects interactions.
- In the future, we plan on applying machine learning techniques to extend the acquired geometry and interaction data in order to reconstruct interactions for novel objects.