NRI:FND: Communicating Physical Interactions

Michael Gleicher, PI, Bilge Mutlu, co-PI, Michael Zinn, co-PI
Pragathi Praveena, Daniel Rakita, Guru Subramani, Michael Hagenow, Bolun Zhang

NRI Award IIS-1830242

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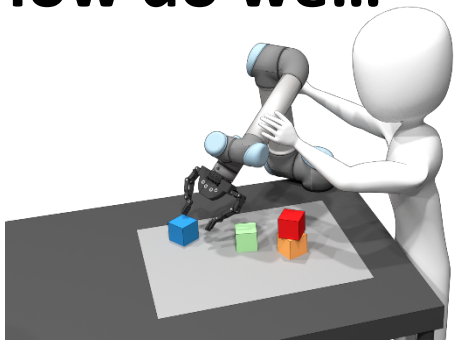
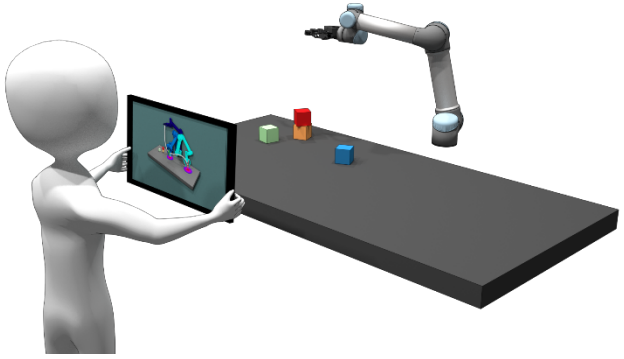
When tasks involve physical interactions
How do we…

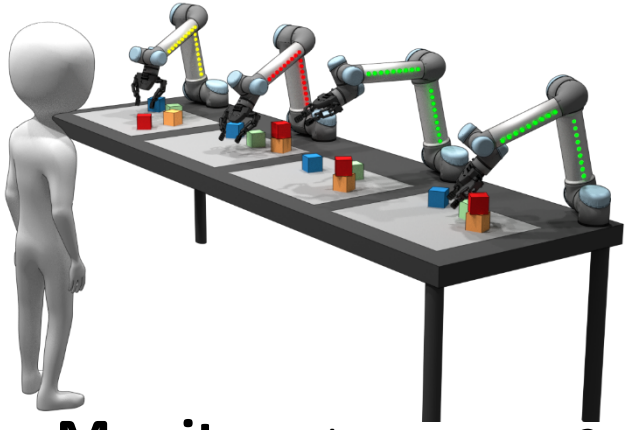


Specify robot actions?

Control robot motions?



Interpret robot plans?

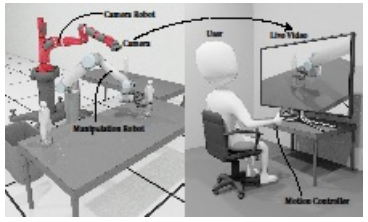


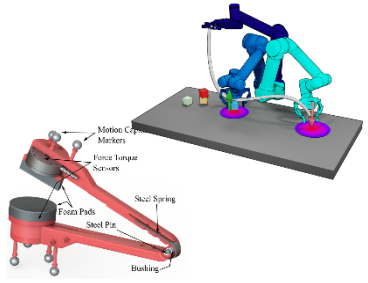
Monitor robot activities?

Our Plan:

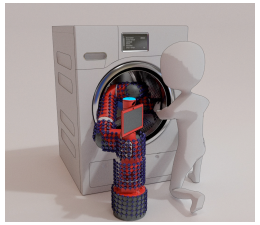
Formative Studies:

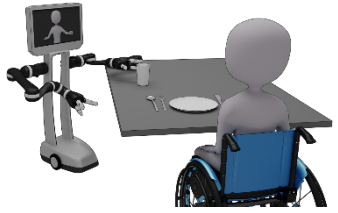
Method Development:





Proof of Concept Applications:





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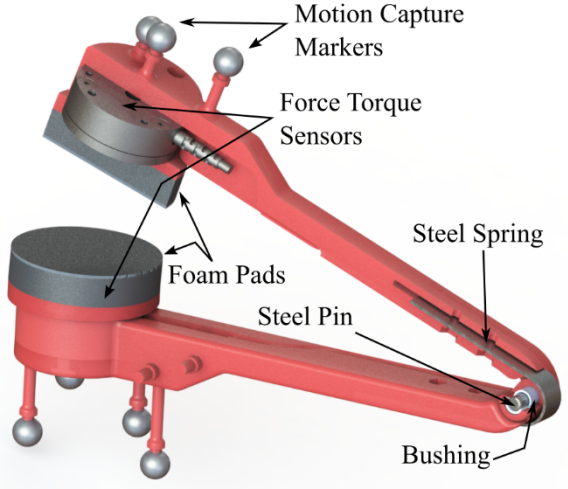
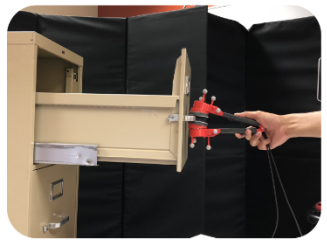
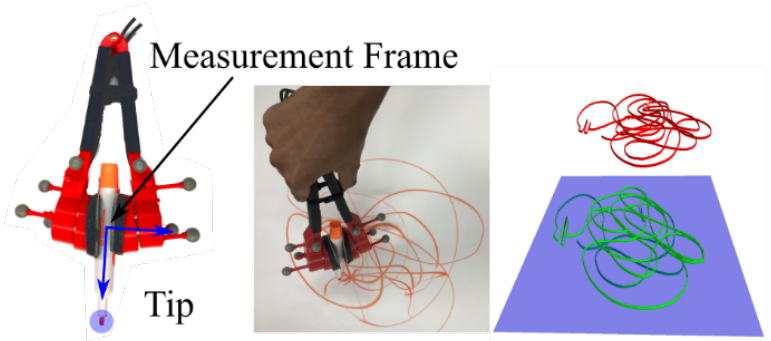
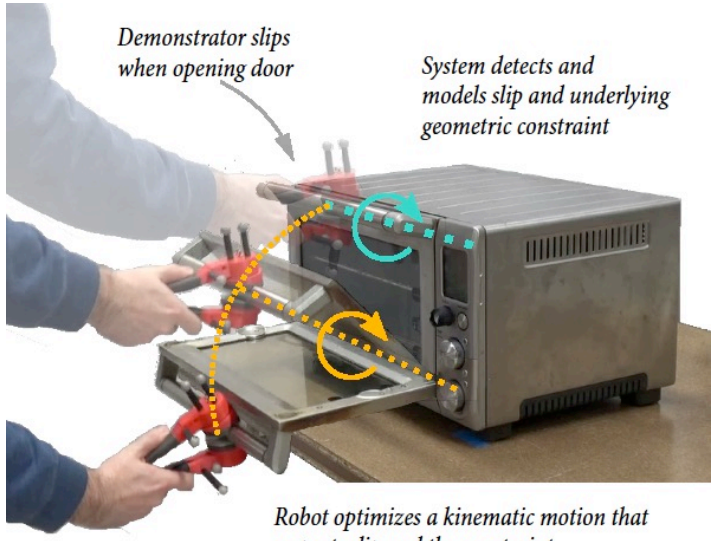
Initial Progress: Input Devices, Constraint Inference, Robot Replay









Robot optimizes a kinematic motion that respects slip and the constraint

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Initial Progress: Tele-Operation, Haptic Illusions, Planning