

Design and Control of Reconfigurable Modular Soft Robots (MSoRos)



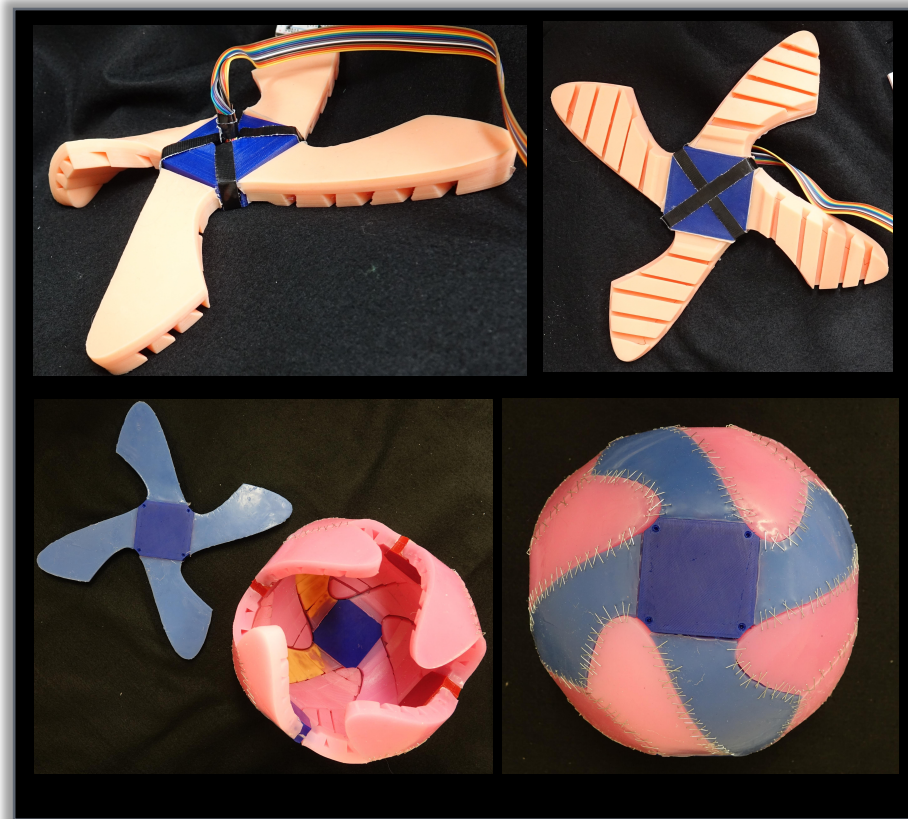
*M3SoRo - Mobility and Morphing using Modular Soft Robots/Award# 1830432/2018-21/
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Challenge

- Robot morphology design for SoRo metamorphosis
- Mobility principles for complex environments

Solution

- Map projections, spherical tessellation, platonic solids for robot morphology design
- Data-driven 'environment-centric' control using motion primitives, graph theory



Scientific Impact

- Environment awareness and reconfiguration. Task-specific morphing of collective MSoRos

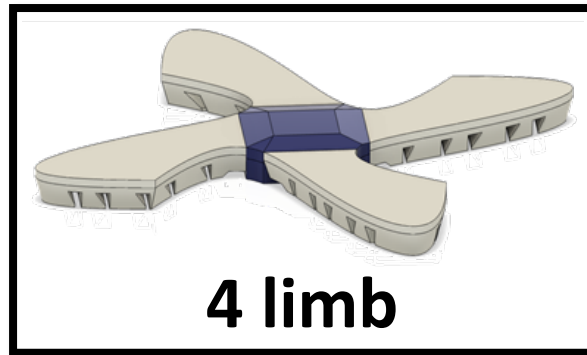
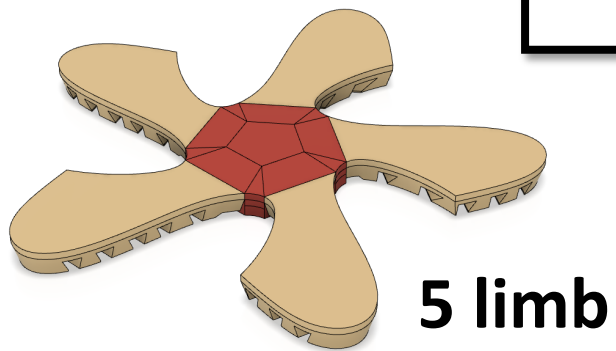
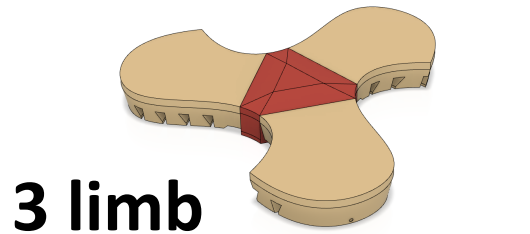
Broader Impact

- MSoRo swarms for disaster relief, precision agriculture
- Motivate youth by correlating to Transformers, Big Hero 6
- Achieve locomotion by learning from the environment



MSoRo and Metamorphosis

MSoRo Modules



Metamorphosis

