Soft Robot for Precise Grip

Status: Filled

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Sponsor(s):

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Project Description

Existing robotic technology is unable to automate variable objects and unstructured tasks. We propose here to design and build the Soft Robotics System: a soft robotic gripper, a control system and software that can manipulate items of varying size, shape and weight with a single device. This end of arm tooling solutions enable industrial applications that previously were off limits to automation. As a demonstration, this Capstone team will demonstrate gripping an egg to deliver from one position to another.

https://www.youtube.com/watch?v=o8DoSvv4P3w

https://techcrunch.com/video/why-soft-robotics-turned-octopus-inspired-robots-into-industrial-grippers/58da8ac9f3bdc9712d67f8ed/

Deliverables

3D printing of soft robotic body
Actuation with reasonable motion & pressing capability
Sensor in skin to measure pressure
A module that acts as central hub for all of sensors and actuation. These sensors will communicate wirelessly.

Timeline

Dec 2017 -Jan 2018: Proposal, Project planning, survey of materials/system
Feb 2018: Research, documentation, & presentation
Mar 2018: Research, design prototypes & material order
Apr 2018: Prototype fabrication (hardware/soft ware)
May-June 2018: Prototype testing & modification
July 2018: Project evaluation & documentation
Aug 2018: Project showcase