

A Design-thinker for Design of Soft Robots

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Abstract

Soft robots have been found many applications in medicine and in service operations. However, the contemporary philosophy in designing soft robots is to go along with bio-mimics. That is, design and building of engineered systems to possess the special capability of creatures or animals. This design philosophy has a limit, because the system so built will not go beyond the creature. In this talk, the author will propose a new design philosophy for building soft robots, which advocates the engineering design process to design and to build a soft robot. More specifically, the design process for soft robots will begin with understanding and analyzing requirements for a soft robot under design and building, and then go along with the phases of concept design, embodiment design and detail design. The special capability of creatures may be incorporated into these design phases.