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Design and construction of self-reconfiguring modular robots



Modular robots are machines made of repeated, identical units. Self-reconfiguring modular robots are able to connect and disconnect modules to change their own morphology, so as to adapt to new tasks and environments, as well as to self-repair and even self-replicate. The goal of this project is to design and construct a simple modular unit based on simple servos, magnets and microcontrollers, in a simple geometric unit like a cube, tetrahedron. Then, we want to make many of these units on a rapid-prototyping machine, and explore the control of these robots for various tasks involving reconfiguration, adaptation, locomotion and manipulation. Suitable for a single student or a team of two.

To learn more, see <http://mae2.wdg.us/ccsl/research/selfrep/index.htm>