

Autonomy Lab

[Web Site](#)



The Autonomy Lab builds life-like machines. Our goal is to increase the autonomy (i.e. self-direction and self-maintenance) of robots and other machines.

There are two main reasons to study autonomous machines:



Scientific: an autonomous machine is a concrete test of hypotheses about mechanisms of intelligent behaviour. We come at this from two directions: a bottom-up approach examining the necessary and sufficient conditions for rational behavior; and a top-down approach realizing and testing models of human and animal intelligence.

Economic: by definition, autonomous machines can do more work than those which require human supervision. Autonomous robots could make society more efficient by enabling new kinds of industry, science and exploration.

The acquisition and management of resources such as energy and space is a fundamental, unavoidable task for all living things. From an ecological perspective, intelligent behaviour can be seen as rational manipulation of resources. This observation underlies our approach to building autonomous systems.

- Highly autonomous, long-lived robots
- Biologically-inspired robots
- Adaptive networks and sensor networks
- Minimalist, micro and very low-power robots
- Enabling technology to increase human autonomy
- Artificial life
- Robot simulation, programming and research tools

Our research projects include:

Chatterbox, Misbehaviour, Mother, Player, Rage and Zoo.