# Neurally-inspired and Neurally-driven Robotics

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We describe two roles the brain may play in robotics. The first is the use of the brain as a model for the design of algorithms controlling the perception-action cycle in robots. Based on the sensory information they receive, biological agents create a representation of the environmental state within the brain, and use this as the basis for generating actions in the environment. The adaptability of both the neural representation of the environment and the mapping from the representation to action is one of the key reasons for the robustness of biological behavior, and thus a desirable property for robotic algorithms. In particular, we describe the modeling of perception-action loops controlling eye movements, and their robotic implementation. The second is the use of brain signals to control robotic systems. Here, we describe work showing that integrating information about user intent obtained by monitoring eye gaze with information about brain activity obtained via electro-encephalography (EEG) can lead to improved performance of brain computer interfaces.