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UNDERSTANDING INFORMATION PROCESSING IN  
ANIMALS AS A WAY TO BUILDING INTELLIGENT ROBOTS

Abstract

One motive for the study of artificial neural systems is that knowledge derived from understanding the brain (and its billions of neurons) can be exploited and utilized in the building of machines. We hope to build machines with observational, adaptive, and manipulative powers resembling those of animals and humans. The machines could be used to reduce human exposure to conditions hostile to humans. Severe, dangerous, and unknown environments; long missions to remote locations; and critical, but tedious tasks represent such conditions. Fundamental understanding of nervous systems may be our only hope for building such machines, as no machine built on other principles has come close to achieving this goal.