

Application of Information Measures to Robot Behavior

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Q400

Presentation Points

- Background
- Previous Work
- Current Research Topic
- Methods for Experiment
- Further Related Research Topics

Background

● Embodiment

- Philosophical Reason
- Experimental Design

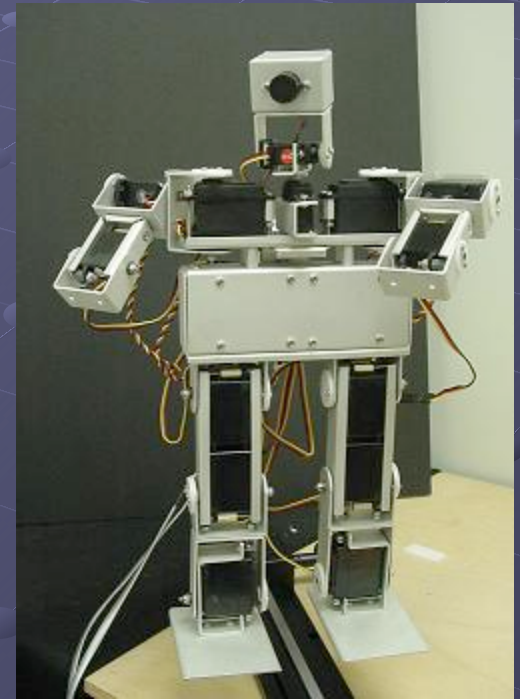
● Information Theory

- Why study information?
- Why use it on vision?

Previous Work/ Current Research Topic

Information Theory applied to:

- Still photos of feline vision
- Computer simulation
- Non-interactive pan-tilt unit
- Current: interactive agent with motored arm movement and pan-tilt unit



Methods for Experiment

- Computer and software setup
- Robotic arm and head setup
- Two experimental conditions
- Informational Theoretic Measures
 - Entropy
 - Mutual Information
 - Integration
 - Complexity

Further Related Research Topics

- Varying parameters of coupling and/or limb and camera mobility
- Employing Genetic Algorithms for determining maximal info retrieval
- Exploring other bottom up stimuli and creating a multi-faceted system
- Implementing a system with top-down effects on behavior