Evolutionary Robotics

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Abstract

Since the beginning of time the only force we know of to produce autonomous as well as adaptive machines was biological evolution. Now Mathematicians and Computer Science are creating the next wave in evolution: evolutionary robotics. Using complicated algorithims for robots to reproduce based on Darwinism.

Introduction

Today we have autonomous machines, yet we still are working on creating adaptive ones. In this review I will attempt to look at how Evolutionary Robotics developed, the theory behind it and how it could be used for future applications in the future. The basis that all of Evolutionary Robotics is based on is Darwinism. What Scientists want to do is to find ways to apply these principles to Computer Science through the use of complicated algorithms.

In this review I will use Mendeley, Science Direct and Google Scholar as my main databases for finding sources and opinions on this subject. I used search terms such as “Evolutionary Robotics” and “robotics” as well as “ethics in Robotics”

Main Body

History

- Early Developments in Robotics
- Scientists that helped developed Robotics
- Early experiments on Evolutionary Robotics

Current Work and Theory

- Example of current non adaptable robots
- Example of Autonomous robots…eg military drones
- Current work being done by Scientist to move the technology forward
- Darwinism in robotics

Future Developments and applications

- Military applications
- Evolutionary Biorobotics

- Swarm Robotics
- Soft Robotics

Discussion

- Ethics in Robotics
- How Darwinsim relates to robotics
- How evolutionary robotics could change warfare
- How evolutionary robotics could eventually be more intelligent then humans

References