Artificial Intelligence in Humanoid Systems

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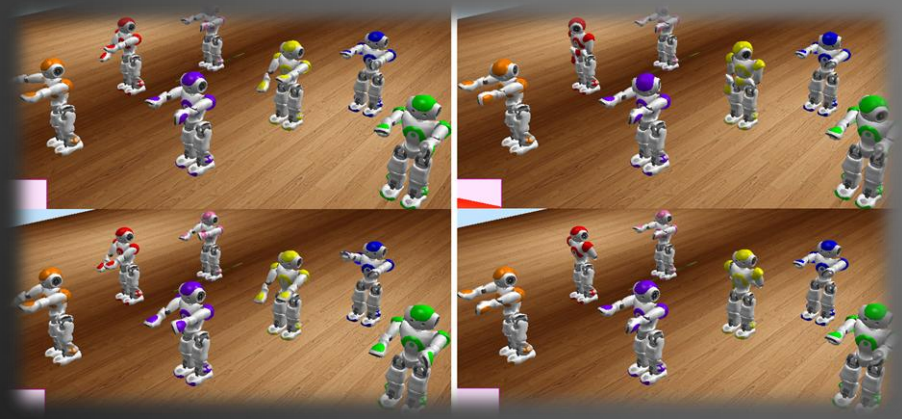
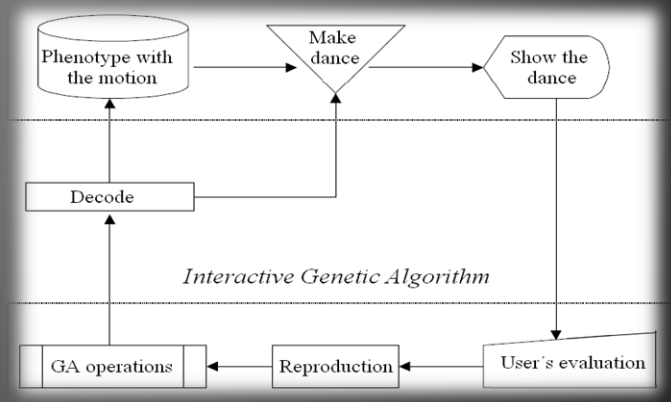
The thesis deals with a usage of artificial intelligent techniques in humanoid robotics. The focus is on social robotics and how to use the interactive evolution for robotic dance system. In this work the definition, principles and basic features of Interactive Evolutionary Computation are described and followed by an overview of their research and applications. This technique optimizes systems based on subjective human evaluation.

The algorithm is applied to a system of design of robotic dance, in which the evolutionary algorithm helps user to create choreography of the robotic dance. The system was implemented in language Python and simulation environment Webots.

POSSIBLE OUTPUT OF THE SYSTEMS: GENERATED MOTION.



THE DESIGN OF THE SYSTEM.



The experiments with several human subjects show that the interactive genetic algorithm approach to robotic dance choreography design aid system is promising.