

Fish shoal inspired movement in robotic collectives

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This paper appears in: Robotic and Sensors Environments, 2008. ROSE 2008. International Workshop on

Publication Date : 17-18 Oct. 2008

On page(s): 7 - 12

Location: Ottawa, ON

Print ISBN: 978-1-4244-2594-5

INSPEC Accession Number: 10393413

Digital Object Identifier : 10.1109/ROSE.2008.4669172

Current Version Published : 07 November 2008

ABSTRACT

Robotic collectives are used for the efficient achievement of complex tasks. There is a significant increase in the interest for emergent, collaborative robotics as a viable alternative to the more centralized classic approach as the dimensions, energy consumption and especially price are becoming required constraints. This paper describes a nature inspired algorithm intended for the movement and communication of such robotic collectives. As a case study, the implementation of the emergent algorithm on a system consisting of LEGO Mindstorm Robots is further discussed along with some of the most interesting experimental results.

INDEX TERMS

- **INSPEC**

- **Controlled Indexing**

- mobile robots , motion control , multi-robot systems

- **Non Controlled Indexing**

- LEGO Mindstorm Robot , collaborative robotics , fish shoal inspired movement , robotic collectives

- **Author Keywords**

- collective robotics , emergent behavior , nature inspired movement