

Membrane Computing for Distributed Control of Robotic Swarms: Emerging Research and Opportunities

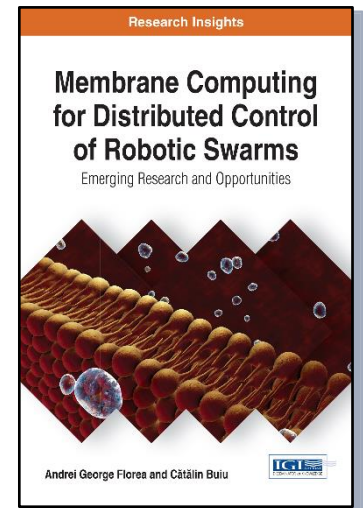
Part of the Advances in Computational Intelligence and Robotics Book Series

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Description:

Developments in bio-inspired computation have impacted multiple fields and created opportunities for new applications. In recent years, these techniques have been increasingly integrated into robotic systems.

Membrane Computing for Distributed Control of Robotic Swarms: Emerging Research and Opportunities is an innovative reference source for the latest perspectives on biologically-inspired computation techniques for robot design and control. Highlighting a range of pivotal topics such as software engineering, simulation tools, and robotic security, this book is ideally designed for researchers, academics, students, and practitioners interested in the role of membrane computing in mobile robots.



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Topics Covered:

- Computing Models
- Decentralized Control
- Problem-Solving Techniques
- Robotic Security
- Simulation Tools
- Software Engineering

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Andrei George Florea was born in 1991 and graduated Informatics at the Letters and Sciences Faculty of the Petroleum-Gas University of Ploiesti, Romania. After graduating the Advanced Technologies for Data Processing Master's degree program at the same university, he enrolled in the Ph.D. program entitled *Bioinspired Algorithms for Robotic Swarms Security* at the Department of Automatic Control and Systems Engineering of the Politehnica University of Bucharest, Romania. His primary research interests are in software engineering, swarm intelligence, distributed algorithms and embedded systems.

Cătălin Buiu was born in 1968 and in 1992 graduated from the Politehnica University of Bucharest with a major in control engineering. Since 2004 he is a Professor at the Department of Automatic Control and Systems Engineering of the same University. He is the head of the Laboratory of Natural Computing and Robotics and of the Laboratory for Cognitive Robotics applied in Medicine. He holds a double doctorate in control engineering and in natural sciences, respectively. His research interests include robot control, multi-robot systems, human-robot interaction, membrane computing, and computational biology.