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   Autore   Zhang Gexiang

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                    Mario J. Pérez-Jiménez, Agustín Riscos-Núñez, Sergey Verlan, Savas
                    Konur, Thomas Hinze, Marian Gheorghe

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   Nota di contenuto   Chapter 1 Introduction -- Chapter 2 P systems Implementation on P-
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                    Membranes: The Java Environment for Nature-inspired Approaches
                    (JENA) -- Chapter 6 P systems Implementation on CUDA.-Chapter 7 P
                    systems Implementation on FPGA -- Chapter 8 Hardware
                    implementations and applications.

   Sommario/riassunto   The theoretical basis of membrane computing was established in the
                    early 2000s with fundamental research into the computational power,

complexity aspects and relationships with other (un)conventional computing paradigms. Although this core theoretical research has continued to grow rapidly and vigorously, another area of investigation has since been added, focusing on the applications of this model in many areas, most prominently in systems and synthetic biology, engineering optimization, power system fault diagnosis and mobile robot controller design. The further development of these applications and their broad adoption by other researchers, as well as the expansion of the membrane computing modelling paradigm to other applications, call for a set of robust, efficient, reliable and easy-to-use tools supporting the most significant membrane computing models. This work provides comprehensive descriptions of such tools, making it a valuable resource for anyone interested in membrane computing models. .