Abstract

Simulators are limited by the available resources on the GPU as well as the CPU. Simulation of P systems with active membrane using GPUs is a new concept in the development of applications for membrane computing. P systems are an alternative approach to extract all performance available on GPUs due to its parallel nature. In this paper, a design and an implementation of a simulator for a cryptography system using GPU in a P system frame is presented. Then a comparative study is conducted concerning the performance of the GPU model and the CPU model in terms of the needed time to perform encryption/decryption processes. The results show that the proposed GPU system can help in enhancement of encryption/decryption algorithm running in membrane environment.
Using P System with GPU Model to Design and Implement a Public Key Cryptography

References


Index Terms

Computer Science  Security

Keywords

GPU  CPU  Membrane Computing  P system