

Formalización computacional del experimento de Lipton sobre el problema SAT

Mario J. Pérez-Jiménez; Fernando Sancho-Caparrini
Carmen Graciani-Díaz; Alvaro Romero-Jiménez

In this paper a computational formalization of Lipton's experiment about satisfiability problem of Propositional Logic is presented. We design a program that implements this experiment within a DNA based molecular model without memory: the unrestricted model of Adleman. We propose a formal description of the designed molecular program as a formal system. The formal verification of the program is established proving soundness and completeness of formal systems associated with it, using invariant method and inductive techniques. Finally, an extension of Lipton's experiment for arbitrarily expressed formulas is given.

Keywords: Computación molecular, Computación ADN, Experimento de Lipton, Problema SAT, Verificación de Programas.