ACOPIN: An ACO Algorithm with TSP Approach for Clustering Proteins in Protein Interaction Networks

Authors : Jamaludin Sallim, Rozlina Mohamed, Roslina Abdul Hamid

Abstract : In this paper, we proposed an Ant Colony Optimization (ACO) algorithm together with Traveling Salesman Problem (TSP) approach to investigate the clustering problem in Protein Interaction Networks (PIN). We named this combination as ACOPIN. The purpose of this work is two-fold. First, to test the efficacy of ACO in clustering PIN and second, to propose the simple generalization of the ACO algorithm that might allow its application in clustering proteins in PIN. We split this paper to three main sections. First, we describe the PIN and clustering proteins in PIN. Second, we discuss the steps involved in each phase of ACO algorithm. Finally, we present some results of the investigation with the clustering patterns.