

Swarm Task Scheduler: Project Description

Target & Objectives

This project aims to implement a swarm optimization algorithm and compare it to one or two other swarm optimization algorithms discussed in the paper “Exploring Swarm Intelligence-Optimization Techniques for Task Scheduling in Cloud Computing: Algorithms, Performance Analysis, and Future Prospects” by Farida Siddiqi Prity, K. M. Aslam Uddin, and Nishu Nath.

The paper provides examples of algorithms and mentions the resources where they were implemented and tested. This project will utilize the results and references from the mentioned paper for further analysis, evaluation criteria, and proposed technologies to use.

The research and implementation process will be thoroughly documented in a written report and presented through a formal presentation.

Methods & Technologies

The approach involves applying the Particle Swarm Optimization (PSO) algorithm in a program. The primary objective is to identify the global minimum of a given fitness function, which involves the scheduling of tasks in a cloud environment to keep the usage of performance indicators low, e.g., resource cost or memory consumption.

The program will be developed in either C or Java, as these programming languages offer familiarity and reliability. After implementation, the application will be tested in a cloud simulation environment, such as CloudSim. The algorithm’s performance will then be evaluated, with a focus on cost efficiency, as recommended in the mentioned main source.