Swarm Intelligence Algorithms for Optimal Scheduling for Cloud-Based Fuzzy Systems

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Abstract: A fuzzy cloud resource scheduling model with time-cost constraints is built using fuzzy triangular numbers to represent uncertain task execution time. Task scheduling reduces total time and cost spent on a project. It connects virtual machines and functions. Particle swarm optimization (HPO) is used to plan cloud resources (HSOA). • e approach uses orthogonal particle swarm initialization to increase the quality of the initial particle exploration, rerandomization to regulate the particle search range, and real-time updating of inertia weights to control particle speed. • e suggested problem model and optimization approach are evaluated using random simulation data provided by the CloudSim simulation platform. Less overall execution time and a lower cost are shown to have fast convergence and solution capabilities in experiments.