

## **Efficient transmission based on Genetic evolutionary algorithm**

### **ABSTRACT**

Today's society has grappled with the age of big data. Widespread use of informatization technology has promoted the development of artificial intelligence and communication technologies, which can play an important role in communication networks. In this paper, an energy-saving mechanism based on genetic algorithm in wireless sensor network (WSN) is proposed. The basic working principle and main characteristics of genetic algorithm (GA) are summarized, and the theory, technology and existing problems of GA are discussed. Through the analysis of the transmission efficiency of GA, a new genetic evolutionary algorithm combined with the characteristics of ant colony algorithm (ACO) is proposed. Through the simulation of the transmission performance of genetic optimization algorithm, the comparison of transmission energy consumption between GA and evolutionary algorithm is analyzed, and the evolutionary algorithm with higher transmission performance is obtained. Results showed that the proposed hybrid genetic algorithm with ant colony optimization (GACO) delivers 78.70% and 73.51% lower number of transmission failures than GA and ACO respectively.