

A hybrid Nature Inspiring Optimization Algorithm to enhance the Fog Network Architecture

Due to the advancements, the internet is being used to share the data among small devices and sensors connected in billions to constitute the Internet of Things (IoT). A typical IoT system is continuously sending, receiving, and analyzing the data obtained from the end devices. The data are getting centralized in a cloud computing model. Though the data is the lifeblood providing real time control over the devices, this virtual flood of data may lead to many barriers. Thus the edge computing helps in deploying the storage and computing resources at the location where the data is produced. It saves the bandwidth as well as results in lower latency but lacks security.

On the other hand, Fog computing can be seen as an extension of cloud computing towards the network edge. It is placed in between the edge devices and the Cloud Core. Besides computing, storing and networking, it caters the need of low latency and real-time interactive applications.

The emergence of 5G is steadily going to spur innovation across many industries to provide a platform for IoT to become an integral part of our economy and lifestyle. Many different technical issues in cloud, the edge resources, and the end devices itself would have to be integrated into a single optimization problem called network optimization. The IoT network optimization improves the traffic management, efficiency, energy conservation, reduction in latency, higher throughput and faster rate in scaling up or deploying IoT in the network.

Through this research work, I am going to propose a hybrid nature inspiring algorithm to enhance the Fog networks architecture to get major benefits.