Project Report

Optimizing Fog/Edge Networks

Broader Area of Research

This research lies at the intersection of Artificial Intelligence, Machine Learning, Fog Computing, Edge Computing, and the Internet of Things (IoT). It aims to address the challenges of optimizing network performance in distributed computing environments where computational resources are limited, and real-time data processing is critical. The focus is on to enhance the efficiency, scalability, and reliability of fog and edge networks in IoT systems**.**

Specific Tools Required

- **Frameworks:** NS3-AI
- **Programming Language**: Python, C++
- **Data Processing and Analysis** : TensorFlow, Keras
- **Network Simulation** : NS-3 Simulator, LoRaWAN Module

Objective

The objective of this research is to develop and implement reinforcement learning algorithms within the ns-3 simulation environment to optimize fog and edge networks. The project aims to enhance network performance by addressing issues such as congestion, distributed gateway management, and parameter optimization. By improving scalability, reliability, and power efficiency, the research will contribute to more effective and adaptable IoT network deployments**.**

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Supervisor's Signature
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