

Chapter 6

A Cloud–Edge–Fog Hybrid Architecture for Productive IoT–Based Smart City Operation

Surya Selwin

 <http://orcid.org/0000-0002-1354-1311>

Sri Ramachandra Faculty of Engineering and Technology, India

Neeraj Chandnani

 <http://orcid.org/0000-0002-0107-8147>

Koneru Lakshmaiah Education Foundation, India

Shaiqa Nasreen

 <http://orcid.org/0000-0001-5010-8608>

Islamic University of Science and Technology, Awantipora, India

Mohit Tiwari

 <http://orcid.org/0000-0003-1836-3451>

Bharati Vidyapeeth's College of Engineering, Delhi, India

Jui Pattnayak

 <http://orcid.org/0000-0002-1344-9718>

JIS College of Engineering, Kalyani, India

Mukesh Madanan

 <http://orcid.org/0000-0001-7028-959X>

Dhofar University, Oman

ABSTRACT

The smart-city systems of today require computing systems that can manage large volumes of latency-sensitive IoT data with a very small power cost. Nevertheless, the dynamics and distribution of such conditions do not go well with traditional cloud-centric infrastructures and, as a result, can cause network congestion, slow analytics. The research suggests a Cloud-Edge-Fog Hybrid (CEFH) system to combine real-time reinforcement learning to coordinate tasks among levels on intelligence. The system is constantly monitoring resource availability, network conditions and energy to assign the computational tasks dynamically. The use of

DOI: 10.4018/979-8-2600-0008-3.ch006