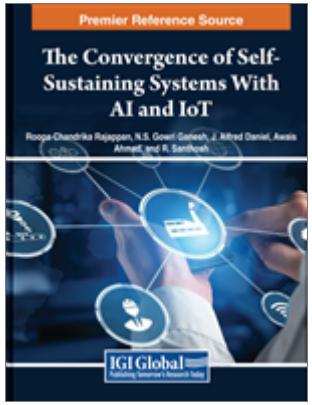

IoT-Based Smart Climate Agriculture System for Precision Agriculture Using WSN

Pooja Chaturvedi, Purnima Gandhi (/affiliate/purnima-gandhi/469086/)

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ıe collection of the data from the environment in the IOT based
s. The WSN constitute a challenging factor in collection and
the drones, due to the resource scarcity. Clustering can aid in
ıe sensor networks. The clustering process requires a large
ermining the most efficient node to be selected as a cluster
network is dependent on the energy consumption during the
ıd data transmission process. The chapter proposes a cluster
routing approach using weight-based cost function for the IOT
system. The nodes in the sensor network are clustered into a
the k-medoids clustering. The optimal path for the data
e base station is obtained using the weighted cost function using
ıe, residual energy and hop count. The performance of the
dated analytically.

Chapter Preview

Top

s are considered to gain more research interest in today's time
vancement in the field of wireless communication scenarios,
gies and sensing devices. WSN is categorized as a collection of
having limited energy, processing and communication
on with internet of things (IOT) technology, the sensor network
merous applications such as healthcare, structural monitoring
e operations. However, the efficiency of the sensor network is
the limited source of energy (Mahmood et al., 2020) (Pal,
.

ng helpful in the task of remote sensing which is extensively
sion agriculture. The precision agriculture system consists of
nmanned aerial vehicles. The sensors are deployed in the
ure the trend and/or variations. The precision agriculture system
sks of monitoring and tracking applications like environmental
uch as temperature, pressure, soil moisture etc.

work protocol is largely dependent on the extent of coverage of
often considered as the quality-of-service related parameter. The
o be covered by a sensor node, only if it lies within the sensing
e. The sensing range of the sensor nodes is considered as the
ensor node is generally located at the center of the region. The
tween the sensor node and the base station is usually
y consuming task, so the network is organized into multiple
g techniques. At each level, there is a CH, which performs the
collected from the sensor nodes. The data is transmitted using
from the CH towards the base station. The remote sensing in
done with the help of drone. The drone communicates directly
ferent levels. The approaches which consider the clustering as
d data towards the base station in an energy efficient manner is
ignificance.

ion Agriculture

systems can be significantly aided by the use of Wireless
lication areas of usage of the WSN are as shown in Figure 1.
he interconnection of sensing units for the real time detection
nt parameters such as temperature, humidity, soil moisture etc.
riculture system can assist the farmers in having the proximate
vironmental parameters, crop health conditions and the resource
hese systems are gaining huge attention of the research

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Z&sp=r)

riculture system is considered to be divided into three layers as:
layer and the sensing layer. The organization of these layers is
e user interface layer consists of the interface through which
the systems and take appropriate decisions. The IOT layer
nection units which can provide data communication between
sensing layer consists of the number of sensing units, which
t the environmental parameters.

f IOT based smart agriculture system
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