



# MAGAZINE

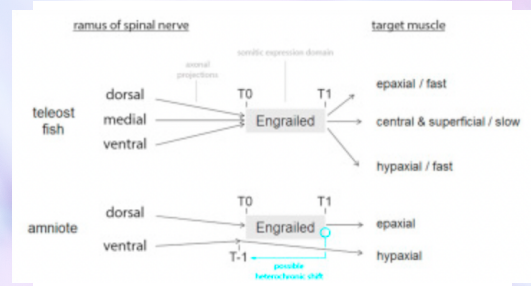
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Department of  
**CSE**

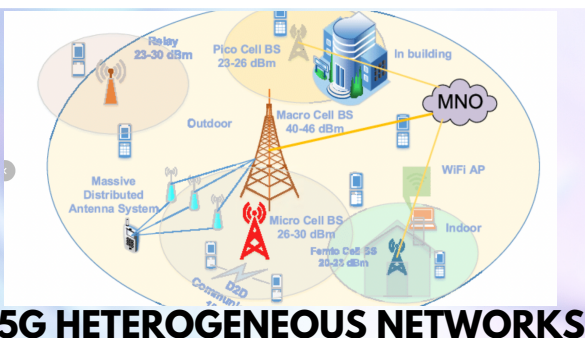
# Byte Quest



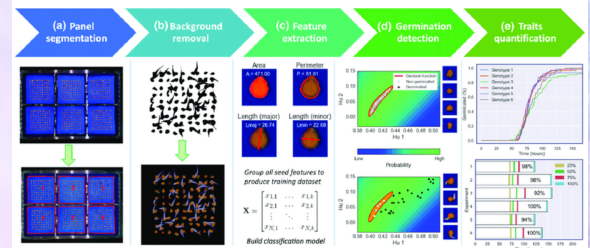
**IOT SHARED MOBILITY**



**NEXTG**



**5G HETEROGENEOUS NETWORKS**



**SEEDGT**

## Department Vision

*To be a center for academic excellence in the field of Computer Science and Engineering education to enable graduates to be ethical and competent professionals.*

### **FACULTY COORDINATORS**

S. KOMAL KAUR  
(ASST. PROFESSOR)  
T. NISHITHA  
(ASST. PROFESSOR)

## Department Mission

*To enable students to develop logic and problem solving approach that will help build their careers in the innovative field of computing and provide creative solutions for the benefit of society.*

### **STUDENT COORDINATORS**

CHANDRASHEKAR (2/4) CSE B  
ANISHA (4/4) CSE B  
AKASH (3/4) CSE C





# Byte Quest

## BLOCKCHAIN IOT-SHARED MOBILITY

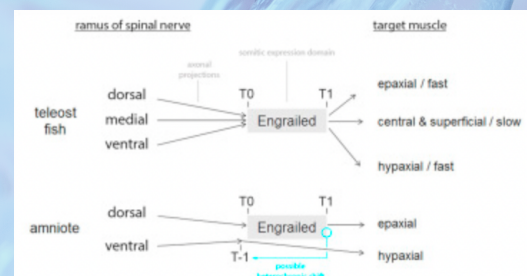
The shared mobility concept is seen as disruptive and transformative for the automotive industry. Shared mobility is changing the way we choose our travel mode, from just owning a car to e-hailing, car-sharing, and other relevant mobility solutions. There is a growing interest of car manufacturers (original equipment



manufacturers or OEMs) in car-sharing as an expansion strategy. Similarly, blockchain technology is seen as another disruptive technology, which can potentially change how the data is stored and accessible via its immutable, transparent, and trustworthy features. Motivated by these two current trends, this paper aims to explore how blockchain and IoT technologies together can drive shared mobility forward. We have presented a high-level architecture for a blockchain-IoT-based platform for promoting shared mobility combining car-sharing and car-leasing.

## NEXT G

In this work, we present a novel fault injection solution (ThorFI) for virtual networks in cloud computing infrastructures. ThorFI is designed to provide non-intrusive fault injection capabilities for a cloud tenant, and to isolate injections from interfering with



with other tenants on the infrastructure. We present the solution in the context of the OpenStack cloud management platform, and release this implementation as open-source software. Finally, we present two relevant case studies of ThorFI, respectively in an NFV IMS and of a high-availability cloud application. The case studies show that ThorFI can enhance functional tests with fault injection, as in 4%–34% of the test cases the IMS is unable to handle faults; and that despite redundancy in virtual networks, faults in one virtual network segment can propagate to other segments, and can affect the throughput

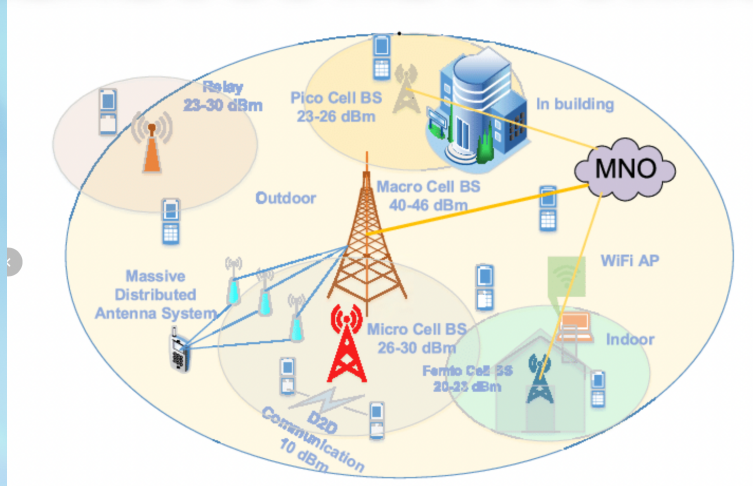




# Byte Quest

## 5G HETEROGENEOUS NETWORKS

Vertical handover is the essential feature of the next generation of heterogeneous wireless networks. Network selection among accessible candidates is the most critical step in vertical handover procedure. Although various algorithms for network



selection have been proposed during recent years, there is no comprehensive study to consider all subscribers' context and requirements in a systematic structured manner.

Furthermore, due to different approaches and variety of parameters related to this complicated problem, no inclusive benchmark exists to evaluate the performance of the algorithms. In this paper, we define a global user satisfaction indicator (USI) as a quantitative metric which comprehensively qualifies all candidate networks based on all subscribers' contexts.

Our method is inspired by analytical hierarchical process (AHP) and utility function theory which systematically integrates both customer and network side parameters. This idea leads to proposing a novel algorithm called opportune context-aware network selection (OCANS). OCANS is a network-assisted user centric approach which dynamically and automatically takes into account customer context in the decision of the best network to achieve maximum user satisfaction.

In addition to analytic computations, our practical simulation framework evaluates and compares OCANS to well-known network selection algorithms such as simple additive weighting (SAW), technique for order preference by similarity to ideal solution (TOPSIS) and Multiplicative Exponential Weighting (MEW).



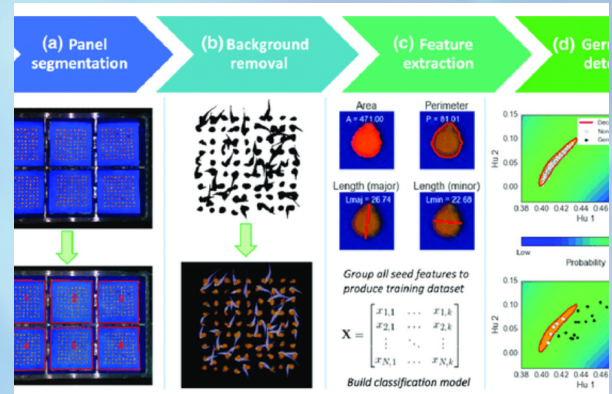


# Byte Quest

## SEEDGT

Internet of Things based Wireless Sensor Networks (IoT-WSNs) are widely employed in a variety of applications, including military, health-care, and industrial monitoring. Security parameters are essential to protect the network from various security threats and attacks because these applications handle sensitive information in potentially hostile and unattended

environments. This paper aims to achieve the security parameters for IoT applications based WSNs by proposing a secure and energy aware data gathering technique, called SEEDGT, which integrates between trust, public key algorithm, and Compressive Sensing (CS) methods towards achieving security with fair energy load balance in IoT-WSN. The proposed SEEDGT technique has three phases, namely Cluster formation, network operation and reconfiguration phase. During the cluster formation phase, energy-aware and trust based methods are applied for the creation of clusters and cluster head selection. The network operation phase aims to achieve security by using the public key algorithm to encrypt network data during the data gathering process. Moreover, in this phase, CS strategy is employed to reduce the original data size, which leads to a reduction in energy usage. Finally, the changes that could occur during network operations is considered through the reconfiguration phase. The simulation studies illustrate that SEEDGT is effective in achieving better performance than other baseline approaches.



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