CSN/ISM

Research Themes and groups

1:Smart life

Innovative solution on:

- Quality of life,
- Health and well being,
- Home automation applications,
- Light/energy use monitoring
- Other

2:Smart argriculture

Innovative solution on:

- Smart irrigation
- Crop recognition, unwated weed, disease,
- Livestock farming monitoring
- Food security
- other

3:Smart Enviroment

Innovative solution on:

- Early warning systems (floods, fire, any danger in the enviroment)
- Disaster management applications
- Smart space and recreation applications
- Enviroment paramneter monitiring (Air quality, Temperature, moisture)
- Resource management (waste water, waste, recycling etc)
- Other Climate change issues
- other

4:Smart governmnet

Innovative solution on:

- Open data governance in suistanable smart city
- Open data sharing standards in cities
- Big data, Cloud computing, databases.
- Cultural heritage
- Online services (e-systems solutions)
- Other

5:Smart Mobility

Innovative solution on:

- Intelligent parking management
- Intellignet traffic management
- Predictive vehicle mantainace system
- Smart survillence system and road safety
- Fleet/transport management
- Location based solutions with GIS
- other

6:AI & ML

This area is a cross cutting issue in all 9 research themes, including the innovation part of the proposed solution.

- e.g Computer vision (waste sorting-mobile and sensor)
- NPL,
- House pricing prediction in different areas of dar es salaam, develop an app (to help a person to know the estimation of price before renting)
- Other

7:Networks

Innovative solution on:

- Permmance prediction
- AI based networking
- Network Optimization (considering factors like latency, bandwidth, and reliability.)
- Network security
- Other

8:Industrial Autiomation

Innovative solution on:

- Industrial IoT applications
- Product sorting
- Water level monitoring
- Others

9:Data science

Innovative solution on:

- Data mining, (eg social media data, sentiment analysis ie user perception on social media news platforms Milard ayo, etc)
- Cyber security & privacy,
- Block chain technologies
- Big data
- Data life cycle process
- Others

10:Operational research

Innovative solution on:

- Queuing Theory (analyze and optimize the performance of systems with queues, such as computer servers handling network requests.)
- Simulation Modeling
- Linear Programming (optimize resource allocation in computer systems and networks.)
- Data Analysis and Statistics. (analyzing data to make informed decisions about system and network performance)
- Risk Management(assess and manage risks associated with the operation of computer systems and networks.