

## **S1: UAV – Routing and Communication-based Machine-learning/Deep Learning solution**

### **Session organizers**

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### **Session Summary:**

Unmanned Ariel Vehicles (UAVs) have provided broad areas for research and deployment due to efficient use of drones and flying ad-hoc network (FANET) capabilities in several military and rescue applications. Drones have high mobility in 3 dimensional (3D) environments and low battery power, which produce problems such as short journey time and infertile routing. The optimal routing for communication will assist in resolving these problems and provide energy-efficient and secure data transmission over FANET.

UAVs present various communication challenges due to the dynamic nature of the network and ever-changing topology. Owing to high mobility, it is difficult to ensure a well-connected network and link stability. Thus, flying nodes are more likely to become disconnected from the network. To overcome these discrepancies, it provides a well-connected network, reducing the number of isolated nodes in FANETs utilizing the depth of machine learning (ML) by taking inspiration from deep learning (DP) and enforcement learning. Every biological species is innately intelligent and has a strong learning ability. Moreover, they can learn from existing active events and make decisions based on previous experience. There may be some unusual events, such as the predator's attack or when it may become isolated from the rest of the community. This ability helps them to maintain connectivity and concentrate on the target. The Topics covered by this particular session include but are not limited to:

- 1- Developing routing protocols based on optimization algorithms
- 2- Deep learning solution for the routing algorithm
- 3- Reinforcement learning-based routing solution
- 4- Energy efficiency for UAV Network
- 5- Flying ad hoc networks mobility models
- 6- Network connectivity for UAV network
- 7- Machine learning solution for communication in UAV

### **Submission:**

In order to submit to this session, please write “**S1**” as a prefix to your manuscript name. for example, if you have your file name as “**UAVmobility.pdf**”, the submitted file name should be “**S1-UAVmobility.pdf**.”

**Template:** Template ( **Word** )(6 pages max , 2 more pages with extra fees) ( **Latex** )

**Submission link:**

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