



**4<sup>th</sup> International Conference on Machine Intelligence and Signal Processing (MISP2022), March 12-14, 2022**  
(<https://misp2022.nitr.ac.in/>)

*Organized by*

**Department of Computer Science and Engineering,  
National Institute of Technology Raipur, India**

1. Title of the Special Session **Machine learning for Communication Applications**

2. Details of Session Chair and Co-Chair

**Name (Session Chair): Dr. N. Padmavathy**  
**Email Id: padmavathy.n@vishnu.edu.in**

**Designation: Professor & Head**  
**Contact Number: 9441703866**

**Name (Session Co-Chair):**  
**Email Id:**

**Designation:**  
**Contact Number:**

3. Aims & Scope (Theme of Session)

Communication has been prevalent over centuries since the birth of mankind. Communication has evolved in several forms like writing, reading, understanding, drawing and the list goes on. Still the evolution is continuing as exchange of information in form of signs (verbally or non-verbally). In this process the demand for connecting all corners of the world into one umbrella has enable the communication engineers to develop high sophisticated, reliable and fully efficient system in terms of high data rate and less congestion. The era of new generation communication systems viz. underwater communication systems, wearable devices, autonomous systems, DRONES, IOT and latest applications of Communication systems has brought in challenges to communication designers to improve the performance in terms of data rate, capacity and intelligent processing. To make the system more intelligent, there is a need to integrate artificial intelligence concepts like machine learning, deep learning into communication applications. This integration can provide more number opportunities through intelligent communication systems which can address or solve problems like signal detection, channel modelling, optimization, protocol design etc.

4. Subtopics: Topics include (but are not limited to) following:

Machine/deep learning for

- Signal detection
- Channel modeling
- Estimation
- Interference mitigation and decoding.
- Resource and network optimization

- Distributed learning algorithms and implementations over realistic communication networks.
- user behavior prediction
- Anomaly detection in communication networks.
- Machine learning for emerging communication systems and applications, such as Underwater networks, Assistive Technologies, drone systems, IOT, edge computing, caching, smart cities, and vehicular networks.
- Transport-layer congestion control.
- Integrated radio frequency/non-radio frequency communication systems.
- Information-centric networks and data mining.
- Network slicing, network virtualization, and software defined networking.
- Performance analysis and evaluation of machine learning techniques in wired/wireless communication systems.
- Scalability and complexity in networks.
- Techniques for efficient hardware implementation of neural networks in communications.

**5. Technical Programme Committee(s) for special session:** (TPC should contain at least 3-5 active researchers of specialized area)

1. Dr. S. Sugumaran, Professor ECE, Vishnu Institute of Technology Bhimavaram
2. Dr. A. Prabhakara Rao, Professor ECE, Vishnu Institute of Technology Bhimavaram
3. Dr. G. Prasanna Kumar, Associate Professor ECE, Vishnu Institute of Technology Bhimavaram
4. Dr. S. Maheswari, Professor ECE, Panimalar Engineering College Chennai
5. Dr. M. Umadevi, Professor ECE, Er Perumal Manimekalai College of Engineering, Hosur.
6. Dr. K. Thaiyalnayaki, Associate Professor ECE, SRM Institute of Science and Technology Chennai

Contacts: All inquiries should be directed to the attention of Session Chair/Co-Chair:

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### Special Session Timeline

Special Session Submission Deadline: **25<sup>th</sup> January 2022**

Acceptance Notification (1<sup>st</sup> round): 30<sup>th</sup> January 2022

Acceptance Notification (2<sup>nd</sup> round): February 15<sup>th</sup>, 2022

Camera Ready Submission: 20<sup>th</sup> February 2022

Registration Due: 25<sup>th</sup> February 2022

Conference Date: 12<sup>th</sup> March – 14<sup>th</sup> March 2022.