

## Tentative Outline

### Special/Thematic Issue for the Journal International Journal of Sensors, Wireless Communication and Control

#### Advancements and Challenges in Federated Learning for Wireless Communication Control Networks

*Guest Editor: Karthi Keyan*

##### Scope of the Thematic Issue:

Federated learning has emerged as a promising approach for training machine learning models in a decentralized manner, while preserving data privacy and reducing communication overhead. In the context of wireless communication control networks, where real-time decision-making is crucial, federated learning offers significant advantages. This special issue aims to explore the latest developments, challenges, and potential solutions in leveraging federated learning for wireless communication control networks. We invite researchers and practitioners to contribute original research articles, reviews, and case studies related to the above subtopics. The submissions should address the challenges, propose novel solutions, and present practical implementations and evaluations of federated learning techniques in the context of wireless communication control networks. Together, we aim to accelerate the adoption of federated learning and facilitate the development of efficient and secure wireless control systems.

**Keywords:** Federated learning, wireless communications control networks, machine learning, resource allocation algorithms, beam forming, distributed channel estimation, Interference management in wireless networks

##### Sub-topics:

- Challenges and opportunities for applying federated learning in control networks.
- Privacy and security considerations in federated learning for wireless networks.
- Federated Learning for Resource Allocation in Wireless Networks.
- Adaptive resource allocation algorithms using federated learning.
- Energy-efficient resource allocation using federated learning techniques.
- Federated Learning for Interference Management in Wireless Networks.
- Interference coordination and suppression using federated learning.
- Distributed channel estimation and beamforming with federated learning.
- Privacy-Preserving Techniques for Federated Learning in Wireless Networks.
- Edge server selection and collaboration strategies in federated learning networks.
- Optimization and Adaptation of Federated Learning for Wireless Control Networks.
- Transfer learning and domain adaptation in federated learning for control applications.
- Federated learning scheduling and learning rate adaptation in wireless networks.
- Real-World Deployments and Case Studies of Federated Learning in Control Networks.

##### Schedule:

- Complete Thematic issue submission deadline: **October 1, 2023**

##### Contacts:

*Guest Editor: Karthi Keyan*

*Affiliation: National Chung Cheng University, Taiwan*

*Email: [nrmkarthi@gmail.com](mailto:nrmkarthi@gmail.com)*

Any queries should be addressed to [support@benthamexecutiveeditors.com](mailto:support@benthamexecutiveeditors.com)