Special Issue

New Trends in Transfer Learning and Federated Learning

Message from the Guest Editors

With the rapid advancement of artificial intelligence and the growing demand for privacy-aware, efficient machine learning systems, Transfer Learning (TL) and Federated Learning (FL) have emerged as transformative technologies in modern AI. TL enables the reuse of knowledge across different domains, accelerating learning processes, while FL facilitates decentralized model training, allowing sensitive data to remain local. When combined, these approaches offer promising solutions to challenges in data efficiency, privacy protection, and distributed computation.

The integration of TL and FL presents both tremendous opportunities and significant challenges. Applications include personalized healthcare, intelligent edge devices, cross-domain recommendation systems, and more. Nevertheless, several critical issues remain to be addressed—including model generalization across domains, communication efficiency in federated settings, privacy guarantees, and handling heterogeneous data in decentralized settings.

This Special Issue seeks high-quality submissions that present recent advances, address existing challenges, and explore new opportunities in transfer learning and federated learning.

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Editor-in-Chief

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