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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Deadline for manuscript submissions

15 December 2025

Electronics

an Open Access Journal by MDPI

Impact Factor 2.6
CiteScore 6.1

mdpi.com/si/242536

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guest-edited by leading experts in selected topics of interest.

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