FEDERATED LEARNING FOR UNBOUNDED AND INTELLIGENT DECENTRALIZATION

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Chairs: *Daniela Annunziata, Marzia Canzaniello*

● *Workshop chairs Marzia Canzaniello and Daniela Annunziata*

First Edition

This first edition of the FLUID workshop focused on the emerging challenges and opportunities in federated learning and intelligent decentralization, bringing together a growing international community of researchers working across optimization, privacy, scalability, and practical deployment of decentralized learning systems.

Keynote Speakers

Yang Liu's keynote (Tsinghua University) introduced new perspectives on collaborative training across heterogeneous models, highlighting novel techniques for integrating large and small models in federated settings. His talk underlined the importance of designing flexible learning frameworks that can adapt to diverse client capabilities and data distributions.

Real-world deployment challenges in federated learning were explored in the keynote by Holger Roth (NVIDIA), who discussed the gap between theoretical models and their application in real-world settings. His talk emphasized the practical complexities faced in deploying privacy-preserving systems at scale and sparked productive discussion among attendees.

● *Keynote speakers Yang Liu and Holger Roth*

The workshop showcased a broad spectrum of research topics, ranging from efficient communication and split learning architectures to applications in smart cities and medical diagnostics. This thematic diversity reflects the rapid evolution of the field and the critical role of interdisciplinary collaboration in addressing the technical and ethical dimensions of decentralized learning.