



UNIVERSITÀ
DEGLI STUDI
DELL'AQUILA



DISIM
Dipartimento di Ingegneria
e Scienze dell'Informazione
e Matematica



Italy Section
Affinity Group



Chapter - Italy Section

IEEE Distinguished Lecturer Seminar

Within the **IEEE Distinguished Lecturer Program**, technically co-sponsored by the **IEEE ComSoc Italy Chapter** and **IEEE WIE Italy**, the University of L'Aquila is hosting the talk of **Prof. Hina Tabassum**, Lassonde School of Engineering at York University, Canada, as the third event of her IEEE Distinguished Lecturer Tour in Italy.



14th October 2026
11:00 - 12:00



Link to join online:

<https://bit.ly/4y4tEXX>



Venue: SALA SEMINARI, Alan Turing Building (Blocco 0), 2nd floor, Department of Information Engineering, Computer Science and Mathematics (DISIM), University of L'Aquila, Via Vetoio snc (Polo Coppito), 67100 L'Aquila

Contact host: dajana.cassioli@univaq.it



Scan the QR-code,
for more information.

Federated Intelligence Over the Air: From Centralized to Collaborative Sensing

Abstract: The next generation of wireless networks will no longer be confined to moving bits — they will sense, communicate, and learn simultaneously. This convergence is expected to unlock distributed intelligence across connected devices, enabling real-time perception and decision-making in dynamic environments. This talk presents two advances in federated signal processing for future 6G networks. First, an over-the-air federated edge learning (OTA-FEEL) framework with integrated sensing and communications is introduced. Rather than treating environmental echoes solely as interference, the proposed approach exploits them to support reliable model aggregation while preserving sensing and communication performance through joint scheduling and beamforming design. The second part of the talk presents FedTrack, a federated learning-inspired framework for distributed target tracking and velocity estimation. By exploiting Doppler shifts in received signals, distributed devices collaboratively estimate a target's motion and location through communication-efficient iterative updates, achieving performance close to centralized estimation while significantly reducing coordination overhead. Together, these developments illustrate how federated intelligence over the air can transform wireless networks into systems that not only communicate, but also sense, learn, and collaborate. The talk concludes with emerging applications in autonomous systems, smart cities, and intelligent infrastructure, highlighting the growing role of signal processing in shaping future wireless intelligence.



Prof. Hina Tabassum
Lassonde School of Engineering
York University, Canada

Bio: Hina Tabassum (Senior Member, IEEE) received the Ph.D. degree from the King Abdullah University of Science and Technology. She is currently an Associate Professor with the Lassonde School of Engineering at York University, Canada, where she joined in 2018. She also serves as a Visiting Faculty member at University of Toronto and holds the York Research Chair in 5G/6G-enabled mobility and sensing applications. She was selected as an IEEE Communications Society Distinguished Lecturer for 2025–2026 and has been listed among Stanford's World's Top 2% Researchers from 2021 to 2025. She has earned numerous distinctions, including the N2Women Star in Networking and Communications (2025), Early Career Lassonde Innovation Award (2023), N2Women Rising Star in Networking and Communications (2022), and multiple Exemplary Editor awards from IEEE journals. She has authored over 120 refereed publications in leading IEEE journals and conferences. Her research focuses on 5G/6G wireless communications and sensing networks, connected and autonomous systems, and AI-enabled wireless resource management. Her recognitions include the N2Women Star in Networking and Communications (2025), the N2Women Rising Star Award (2022), and the Early Career Lassonde Innovation Award (2023). She currently serves as an editor for several leading IEEE journals, including IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, and IEEE Communications Surveys and Tutorials.