

work that leverages Digital Twin (DT) technology as the intelligent “brain” for Unmanned Aerial Vehicle (UAV) swarms, enabling proactive and adaptive network restoration.

A central focus of the lecture was the introduction of two closed-loop DT lifecycles. The first, DT-C1, focuses on spatiotemporal network traffic prediction using Spatial-Temporal Graph Convolutional Networks (STGCN). To handle the partially collected or missing data common in post-disaster scenarios, Dr. Ye detailed the Spatial-Temporal-Aware KNN (STAK) data imputation method. Furthermore, a Residual-based Calibration (ResCAL) model was introduced to forecast future residuals and calibrate prediction errors, ensuring high-fidelity digital representations. The second lifecycle, DT-C2, governs hierarchical UAV deployment and resource allocation. This involves a Multi-Objective Optimization (MOO) approach to balance end-to-end throughput, user coverage, and deployment costs. Dr. Ye explained how Weighted Tchebycheff Scalarization can be used to solve these complex optimization problems.

The seminar also delved into the Clustered-Modular Mobility Model (Clustered-Mo3), which captures realistic, correlated user movement patterns during emergencies, such as community assembly for rescue or mass evacuation. Additionally, Dr. Ye showcased a practical testbed implemented via the Azure Cloud ecosystem, demonstrating how physical network data is processed through a unified digitalization layer to provide real-time insights and decision-making support.

Organizing this DLT presented unique logistical challenges, particularly in aligning international schedules to ensure our local community could access such specialized expertise. However, the DLT program’s reward lies in the bridge it builds between global innovation and regional application. What I found particularly impressive



IEEE ComSoc Distinguished Lecturer Dr. Qiang (John) Ye makes final preparations for his presentation on the morning of December 30, 2025.

in this DLT was the seamless integration of theoretical models — like the three-stage smart city vision — with practical, life-saving communication solutions. The high level of engagement during the Q&A session, where students discussed edge collaborative inference and multimodal AIGC, underscored the value of this exchange.

Ultimately, this DLT successfully reinforced the Beijing Chapter’s commitment to advancing technical excellence and fostering international academic ties. By exploring the synergy between DTs and UAVs, our members gained a deeper understanding of how to build resilient communication infrastructure for the future. We look forward to continuing these initiatives to strengthen the global IEEE COMSoc community.

DISTINGUISHED LECTURER TOUR

IEEE ComSoc Distinguished Lecturer Tour of Shiwen Mao in Mexico and the USA

Connecting Ideas Across Borders

by Shiwen Mao, IEEE ComSoc Distinguished Lecturer, Auburn University, USA

I successfully completed an IEEE ComSoc Distinguished Lecture Tour (DLT) in Mexico and the United States this past March. During this tour, I visited three ComSoc chapters: the Monterrey Chapter in Monterrey, Mexico; the Morelos Chapter in Cuautla, Mexico; and the Atlanta Chapter in Atlanta, GA, USA. It was a wonderful opportunity to meet new colleagues, engage with researchers, educators, and students across four universities, and experience the warm hospitality of my hosts in Mexico and Atlanta.

This was a compact tour with a tight itinerary. I delivered five talks at four universities in three cities, scheduled as follows:

- Talk 1: “Covert Symbol Embedding via Chirp Signals for Integrated Sensing and Communications,” Tecnologico de Monterrey, Monterrey, Mexico — hosted by Dr. Cesar Vargas-Rosales (Chair, IEEE ComSoc Monterrey Chapter), Mar.23, 2026
- Talk 2: “Diffusion-enabled 3D Human Pose Tracking, Data Augmentation, Completion, and Acceleration,” Technological Institute of Cuautla, Cuautla, Mexico — hosted by Mr. Jesus Vazquez (Chair, IEEE ComSoc Morelos Chapter), Mar.25, 2026
- Talk 3: “How to Write, Publish, and Survive: Practical Advice on Technical Writing and Research Growth,” Technological Institute of Cuautla, Cuautla, Mexico — hosted by Mr. Jesus Vazquez (Chair, IEEE ComSoc Morelos Chapter), Mar. 25, 2026
- Talk 4: “Diffusion-enabled 3D Human Pose Tracking, Data Augmentation, Completion, and Acceleration,” The Georgia Tech Research Institute (GTRI), Georgia Tech, Atlanta, GA — hosted by Mr. Brian Page (Chair, IEEE ComSoc Atlanta Chapter), Mar.27, 2026
- Talk 5: “Diffusion-enabled 3D Human Pose Tracking, Data Augmentation, Completion, and Acceleration,” Kennesaw State University, Marietta, GA — hosted by Mr. Brian Page (Chair, IEEE ComSoc Atlanta Chapter) and Dr. Razvan Cristian Voicu (Assistant Professor at Kennesaw State), Mar. 27, 2026

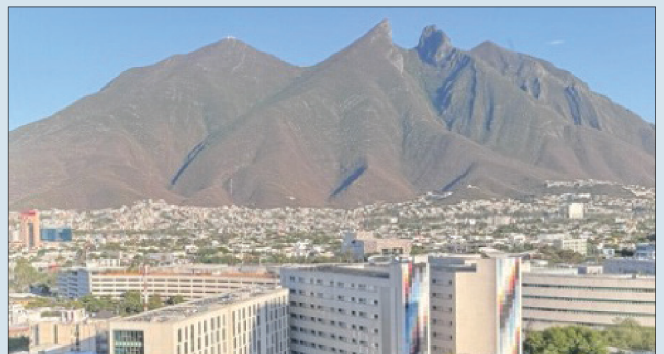
Talk 1 focused on our recent work in Integrated Sensing and Communication (ISAC), which unifies radar and communication on a shared



Discussion on the “GPS Games” topic in Valladolid.



Group photo with students at Kennesaw State University, Marietta, GA, following my talk on March 27, 2026. My host, Mr. Brian Page (Chair, IEEE ComSoc Atlanta Chapter), is second on the right.



The stunning view from my hotel room of the iconic saddle-shaped mountain Cerro de la Silla in Monterrey, Mexico, on March 22, 2026.

platform to enhance spectral efficiency and reduce hardware costs. Specifically, we introduced a covert communication framework for Frequen-

Talks 2, 4, and 5 focused on our research in machine learning-empowered wireless sensing. One theme explored how various radio-frequency (RF) signals can be leveraged to detect and interpret human activities. Another addressed the effective application of machine learning to RF data augmentation, emphasizing methods to reduce reliance on large datasets and minimize the effort required for RF data collection. Finally, we discussed reconstructing full 25-joint configurations from partial 12-joint inputs and accelerating diffusion model training using a novel training-free method.

The talks were well received, drawing both in-person and remote attendees, including students, faculty, and researchers from the three ComSoc chapters. Engaging and insightful discussions with participants during the sessions helped me better understand current challenges and refine my approach to presenting complex technical concepts to a broader, multidisciplinary audience.

Monterrey, known as the wealthiest city in Latin America, feels like a modern U.S. city. In contrast, my next stops, Cuernavaca and Cuautla, reflected a more traditional Mexican atmosphere, just as I had read in books and seen in movies. My Morelos Chapter host, Mr. Jesus Vazquez, kindly gave me a tour of Cuernavaca, the capital of Morelos, before taking me on a long ride to Cuautla. It was a great pleasure to walk through the historic streets, parks, churches, and cathedrals, and to visit a local museum of Chinelo costumes and a bustling local market. Both Dr. Vargas-Rosales and Mr. Vazquez introduced me to authentic Mexican cuisine, which I thoroughly enjoyed at local restaurants. At a restaurant in Cuautla, we were for-

IEEE ComSoc Distinguished Lecturer Tour of Fatima Hussain to Islamabad, Pakistan

The IEEE Communications Society (ComSoc) successfully organized a Distinguished Lecturer (DL) Tour of Dr. Fatima Hussain, IEEE ComSoc Distinguished Lecturer, across Pakistan in October 2025. The



tunate to witness a live Chinelos dance performance—a vibrant tradition that emerged after the Spanish conquest, blending native rites with Christian festivals and humorously mocking the Europeans with their fine clothing, beards, fair skin, and mannerisms.

In summary, the IEEE ComSoc Distinguished Lecture Tour in Mexico and the U.S. was an exceptionally rewarding experience, blending technical knowledge sharing, engaging discussions, and rich cultural immersion. I deeply appreciated the warm hospitality and support of my hosts, as well as the ComSoc DL program officers and staff, which made travel, campus visits, and local experiences seamless and memorable. Beyond technical exchange, the tour strengthened professional connections, fostered potential collaborations, and provided an inspiring perspective on research and cultural diversity across regions.



4