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## COMSOC CHAPTER REPORT

## IEEE ComSoc Indonesia Chapter and Universitas Tanjungpura

### 7th TE Talks: Embracing a New Era of Technology

by Muhammad Ary Murti, Eka Kusumawardhani, Firdaus, Seno Darmawan Panjaitan, Indonesia

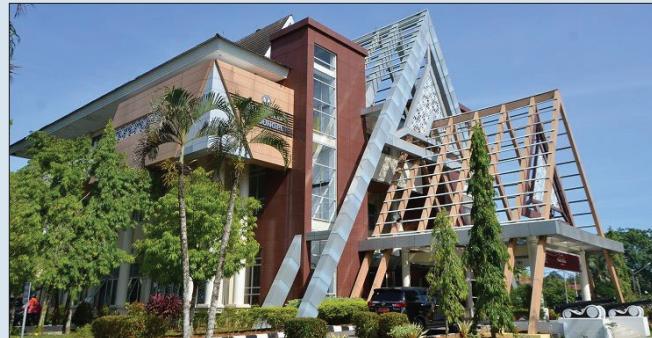
The IEEE Communications Society (ComSoc) Indonesia Chapter is pleased to announce the success of our collaboration with the Department of Electrical Engineering, Faculty of Engineering, Universitas Tanjungpura, in organizing the 7th edition of Electrical Engineering Talks or TE Talks. The event, titled "Embracing the New Era of Technology: AI-IoT & Indoor Positioning System (IPS)," is part of a series of general lectures regularly held by the Department of Electrical Engineering at Universitas Tanjungpura to enrich both academic and practical knowledge in the fields of electrical engineering and communications.

Universitas Tanjungpura, located in Pontianak, West Kalimantan, is one of Indonesia's prominent public universities. Established in 1959, the university has grown into a significant center for higher education in the region, offering a wide range of undergraduate and postgraduate programs. Its Faculty of Engineering, particularly the Department of Electrical Engineering, is dedicated to advancing technological education and fostering research addressing local and global challenges.

TE Talks has established itself as a vital platform for bringing together academics, practitioners, and students in deep discussions in electrical engineering. This 7th edition marks a significant advancement, featuring the active collaboration of the IEEE ComSoc Indonesia Chapter, which broadened the scope and impact of the event through a highly relevant theme for today's digital era. The event was held in a hybrid format at the Department of Electrical Engineering, Faculty of Engineering, Universitas Tanjungpura, with over 170 participants attending in person and another 100 joining online from other universities and institutions in Indonesia. The significant number of participants reflects the high level of interest in the topics discussed and the trust placed in IEEE ComSoc as a key partner in disseminating technological knowledge in Indonesia.

The event commenced with opening remarks from Eka Kusumawardhani, S.T., M.T., who served as the event chair and representative of the IEEE ComSoc Indonesia Chapter. In her speech, Ibu Eka emphasized the importance of synergy between academia and industry and the role of the IEEE ComSoc Indonesia Chapter in providing a collaborative platform for technological innovation. Following her remarks, Prof. Dr.-Ing. Seno D. Panjaitan, Head of the Department of Electrical Engineering, highlighted the relevance of AI-IoT and IPS themes in higher education in Indonesia – finally, Dr.-Ing. Ir. Slamet Widodo, M.T., IPM, Dean of the Faculty of Engineering, expressed full support for the event, underscoring the faculty's commitment to continuously developing technological and educational capacities.

The main discussion sessions were moderated by Zainal Abidin, S.T., M.Eng., who introduced the two keynote speakers. The first session was delivered by Dr. Muhammad Ary Murti, Chair of IEEE ComSoc Indonesia and lecturer at Telkom University. In his presen-



Universitas Tanjungpura, Pontianak, Kalimantan Barat, Indonesia.



Group photo at 7th TE Talks.

tation, he discussed the integration of AI and IoT, highlighting how these technologies can transform various industries through practical research and applications. This presentation provided valuable insights into strategies that can be adopted to develop innovative technological solutions. Next, Firdaus, S.T., M.T., Ph.D., Officer of IEEE ComSoc Indonesia and lecturer at Universitas Islam Indonesia (UII), presented on Indoor Positioning System (IPS) technology. He outlined the latest developments in IPS technology, the methods employed, and the challenges and potential integration with AI and IoT. His presentation offered a comprehensive overview of how IPS could be crucial in future applications. The participants' enthusiasm was evident during the Q&A session, where the questions asked reflected a deep interest in the topics discussed. The responses provided by the speakers further enriched the discussion, fostering a productive dialogue between academia.

As part of the IEEE ComSoc Indonesia Chapter's commitment to strengthening collaboration with educational institutions, the event also featured the signing of an Implementation Arrangement between the IEEE ComSoc Indonesia Chapter and the Department of Electrical Engineering, Faculty of Engineering, Universitas Tanjungpura. This agreement paves the way for future collaborations, including research, technology development, and other academic activities.

The event concluded with a group photo session, which captured the spirit of collaboration and partnership between the IEEE ComSoc Indonesia Chapter and Universitas Tanjungpura. At the IEEE ComSoc Indonesia Chapter, we are committed to supporting similar initiatives that can drive technological innovation in Indonesia and ensuring that this knowledge and collaborative opportunities are accessible to all relevant stakeholders.

## A Summer Tale from a Distinguished Lecturer Tour to South Korea and Taiwan

by Baek-Young Choi, IEEE ComSoc Distinguished Lecturer, USA

What do you get when you combine cutting-edge research, international travel, and the curiosity of bright minds? A whirlwind summer tour as an IEEE Communications Society (ComSoc) Distinguished Lecturer! My journey across South Korea and Taiwan in 2024 was an exhilarating blend of intellectual engagement, cultural exploration, and a sprinkle of jet lag.

My first talks as an IEEE ComSoc Distinguished Lecturer began with two virtual discussions: the first as an invited speaker for the IEEE ComSoc Young Professionals Webinar in June 2024, followed by a Virtual Distinguished Lecture for the IEEE ComSoc Bahrain and Karachi Section Chapters in July 2024. With a click of the mouse and voilà – I was beaming into the screens of attendees halfway across the world.

However, as any good adventurer knows, the real magic happens on the ground.

### SOUTH KOREA — WHERE INNOVATION THRIVES

South Korea greeted me with bustling cities, historic palaces, and, most importantly, eager students and researchers. My talks at Seoul National University, Yonsei University, and Kyunghee University were hosted by incredible scholars who made me feel right at home.

My lecture focused on “AI-Assisted Network Services over Federated Open Networks in 5G and Beyond,” and we had sparking discussions on how artificial intelligence can enhance network management and ensure security in 5G and 6G environments with federated and open network ecosystems. South Korea’s leadership in 5G technology made it an ideal setting to explore these ideas, and the insights exchanged were both thought-provoking and inspiring.

Between seminars, I took a moment to explore Seoul’s vibrant cityscapes. From indulging in bibimbap to wandering the serene grounds of Gyeongbokgung Palace and a traditional village, I was in awe of the perfect harmony between tradition and innovation.

The tour concluded with a visit to Pusan National University in Busan, where I experienced the serene coastal charm of South Korea’s second-largest city. The discussions were as refreshing as the sea breeze, with topics ranging from next-gen networks and testbeds to graduate school and career development.

### TAIWAN — WHERE TECHNOLOGY MEETS TRADITION

In August, I hopped to Taiwan, a haven for technological advancement. My first stop was National Sun Yat-sen University in Kaohsiung, where the hospitality was as warm as the tropical climate.

Continuing with my lecture on “AI-Assisted Network Services over Federated Open Networks in 5G and Beyond,” I was impressed by Taiwan’s emphasis on innovation and the collaborative spirit of its academic community. Discussions delved into AI’s role in various areas, including network resilience and autonomous systems for smart cities, with each university contributing its unique perspective.

The itinerary was packed, with visits to four institutions in two days, crossing the country from south to north, by taxi and high-speed train. Starting from the National Sun Yat-sen University in Kaohsiung, other institutions I visited include National Yang Ming Chiao Tung University in Tainan, National Chung Hsing University in Taichung, and National Taiwan University in Taipei. I discovered that the suffixes “nan,” “chung,” and “pei” of the city names mean *south*, *center*, and *north*, respectively. Each university brought its flavor to the discussions, reinforcing the importance of global collaboration in shaping the future of communication networks.



Map of visited institutions in South Korea and Taiwan.



Touring Cijin Island at Kaohsiung, Taiwan with Profs. Chao-Kai Wen and Fan-Shuo Tseng of National Sun Yat-sen University.



Lunch after the talk with Professors at Kyunghee University, S. Korea.

When I wasn’t immersed in academia, Taiwan’s vibrant night markets and scenic landscapes provided the perfect backdrop to unwind. A ferry ride to Cijin Island from Kaohsiung and a sip of bubble tea in Taipei made me realize that inspiration can strike just as quickly over research discussions as it can over street food!

### INTRODUCING THE COMSOC SISTER SOCIETIES COMMITTEE AND WICE

At the end of each talk, I introduced the IEEE ComSoc Sister Societies Committee and Women in Communications Engineering (WICE), two initiatives close to my heart. As the current Chair of the Sister Societies Committee, I shared the committee’s mission to develop strategies and engage with various national sister societies to foster global collaboration and promote joint activities in specific disciplines. These efforts exemplify ComSoc’s commitment to bridging technological and cultural gaps while encouraging innovation through cooperation.

Additionally, as the immediate past Chair of WICE, I highlighted ComSoc's dedication to empowering women in communications engineering. WICE promotes the visibility and roles of women communications engineers and provides a venue for their professional growth. Introducing these committees allowed me to showcase ComSoc's broader vision for inclusivity and global engagement, inspiring members to explore new opportunities for collaboration and growth.

#### THE TAKEAWAY: BEYOND BORDERS, INTO MINDS

What stood out to me most during this journey wasn't just the depth of academic discussions but the connections made. The students' questions pushed me to think deeper, the faculty's insights sparked new ideas, and the laughter shared over local delicacies reminded me of the universal bond of curiosity.

From Seoul's tech labs to Taiwan's innovation hubs, the Distinguished Lecturer Tour was more than just a series of talks. It was a bridge connecting minds, fostering collaboration, and laying the groundwork for future advancements in communication technology.

As I reflect on this summer journey, I'm brought back to a conversation with a researcher in Seoul who said, "In technology, it's not just the breakthroughs that matter, but the bridges/connections we build along the way." This sentiment truly encapsulated the essence of my tour. From Seoul's tech labs to Taiwan's innovation hubs, the Distinguished Lecturer Tour was more than just a series of talks. It was about forging connections, fostering collaboration, and laying the groundwork for future advancements in communication technology.

Here's to more adventures, ideas, and perhaps more bubble tea!



A group picture after the talk at National Sun Yat-sen University, Kaohsiung, Taiwan.

#### DISTINGUISHED LECTURER TOUR

## My IEEE ComSoc Distinguished Lecturer Tour to the UK

**A Journey Connecting Past, Present, and Future**  
by Houbing Herbert Song, IEEE ComSoc Distinguished Lecturer,  
University of Maryland, USA

I completed a successful IEEE ComSoc Distinguished Lecturer Tour (DLT) to the United Kingdom & Republic of Ireland Chapter in November 2024. I enjoyed my DL tour because it was unique. On one hand, it was jointly sponsored by IEEE ComSoc and Scottish Informatics and Computer Science Alliance (SICSA). On the other hand, my tour took place in the right place at the right time to connect Past, Present and Future: the United Kingdom played a pivotal role as the birthplace of the Industrial Revolution and a key player in the development of Artificial Intelligence (AI), i.e., "next industrial revolution" (past); the world is riding the third wave of AI (present) to advance communications technology for the betterment of humanity (future).

#### A HEARTFELT THANKS TO THE HOSTS

I would like to express my sincere gratitude to the incredible hosts at each university and chapter for their warm hospitality, meticulous planning, and engaging discussions. Their efforts made every lecture and interaction an enriching and enjoyable experience. Below is the list of my summer 2024 DL lectures and the hosts.

- IEEE ComSoc Young Professionals (YP), Webinar, Hosts: Sai Prashanth Mallelu and Virginia Pilloni, June 2024
- IEEE ComSoc Bahrain and Karachi Section Chapters, Hosts: Wafeeq Ajoor and Umair Ahmed Korai, July 2024
- Seoul National University, Seoul, S. Korea, Hosts: Byonghyo Shim and Saewoong Bahk, July 2024
- Yonsei University, Seoul, S. Korea, Host: Jong-Moon Chung, July 2024
- Kyunghee University, Seoul, S. Korea, Host: Choong Seon Hong, July 2024
- Pusan National University, Pusan, S. Korea, Hosts: Taewoon Kim and Dohoon Lee, August 2024
- National Sun Yat-sen University, Kaohsiung, Taiwan, Hosts: Chao-Kai Wen, Fan-Shuo Tseng, Chih-Peng Li, August 2024
- National Yang Ming Chiao Tung University, Tainan, Taiwan, Host: Ren-Hung Hwang, August 2024
- National Chung Hsing University, Taichung, Taiwan, Host: Min-Kuan C. Chang, August 2024
- National Taiwan University, Taipei, Taiwan, Hosts: Hung-Yu Wei and Chia-Han Lee, August 2024

I visited four universities in Scotland: Edinburgh Napier University, whose name was taken from 16th-century Scottish mathematician and philosopher John Napier, best known as the discoverer of logarithms, University of Edinburgh, whose alumnus Geoffrey Hinton was recently awarded 2024 Nobel Prize in Physics for his work on machine learning, University of Strathclyde, the UK's first technological university, reflecting its history, teaching and research in technological education, and Heriot-Watt University, half of whose name was taken from Scottish inventor James Watt, best known for inventing different types of steam engine that helped start the Industrial Revolution.

In addition to the DLT talks, I had small group meetings with faculty and students at each university I visited. These meetings deepened my understanding of communications technology in the AI/machine learning age and fostered potential transatlantic collaborations. IEEE UK and Ireland Section shared my tour information in seven different posts via social media, especially X (formerly Twitter). I was impressed that some attendees followed me from one university to another to attend my lectures. I also noticed that some attendees were affiliated with universities other than the four universities that hosted me. Thanks to

Prof. Nauman Aslam, the IEEE UK and Ireland Communications Chapter Chair, for coordinating and advertising efforts.

### MY SEVEN TALKS

In this DLT, I delivered seven talks, scheduled as follows:

1. Edinburgh Napier University, hosted by Prof. Thomas Tan, on November 19, 2024;
2. Edinburgh Napier University, hosted by Prof. Thomas Tan, on November 20, 2024;
3. University of Edinburgh, hosted by Prof. Luo Mai and Prof. Jingjie Li, on November 21, 2024;
4. University of Strathclyde, hosted by Prof. Karen Renaud, on November 25, 2024;
5. University of Strathclyde, hosted by Dr. Ryan Gibson, on November 26, 2024;
6. Heriot-Watt University, hosted by Prof. Yuan Ding, on November 27, 2024;
7. Heriot-Watt University, hosted by Prof. Yuan Ding, on November 28, 2024.

These DLT talks covered seven different but interconnected topics.

- In the first talk, "Networked Systems and Security Research in the Age of AI/Machine Learning," I presented my recent research on networked system design and verification and quickest anomaly detection.
- In the second talk, "AI for Cybersecurity and Security of AI," I shared my research and perspective on using AI techniques to enhance cybersecurity and using cybersecurity practices to guard AI technologies.
- In the third talk, "AI/Machine Learning for the Internet of Dependable and Controllable Things," I highlighted the role of AI/machine learning in enabling the move from the Internet of Things to the Internet of Dependable and Controllable Things.
- In the fourth talk, "Secure and Trustworthy Transportation Cyber-Physical Systems," I presented my research on the applications of safe, secure, and trustworthy AI systems in the transportation sector.
- In the fifth talk, "Neuro-symbolic AI: The Third Wave of AI," I shared my journey from cyber-physical systems to explainable AI, transfer learning, and incremental learning to neuro-symbolic AI and my perspective on the past, Present, and Future of neuro-symbolic AI.
- In the sixth talk entitled "Counter-Unmanned Aircraft System(s) (C-UAS): State of the Art, Challenges and Future Trends", I presented my award-winning research on Counter-Unmanned Aircraft System(s) (C-UAS) and shared my perspectives on the state of the art, challenges, and future trends of C-UAS.
- In the seventh talk, "Quickest Event Detection in the Age of AI/Machine Learning," I presented my domain-agnostic quickest event detection framework powered by AI/machine learning. At the end of each talk, I highlighted the IEEE ComSoc Distinguished Lecturer Program (DLP) and US-UK research collaboration opportunities.

### SIGHTSEEING AFTER MY TALKS

During my DL trip, I spent one extended weekend sightseeing in Edinburgh and Glasgow.

On Friday, November 22, 2024, I walked through the Royal Mile in Edinburgh, Scotland. First, I walked in the footsteps of history by stopping at Edinburgh Castle, the most iconic building in the city. Next, I climbed the world-famous Scott Monument in the heart of Princes Street for breathtaking views across the city. Then I explored the Palace of Holyroodhouse, the King's official residence in Scotland and the home of Scottish royal history, and the Scottish Parliament, the home of Scottish democracy. Last, I entered the National Museum of Scotland to discover the delights of the natural world, travel back in time through Scottish history, explore world cultures, and be enthralled by mod-



H. Herbert Song before giving his talk at Edinburgh Napier University.



H. Herbert Song in front of James Watt statue after giving his talk at Heriot-Watt University.

ern-day technology. I also enjoyed traditional Scottish Haggis, Neeps & Tatties, and Single Malt Scotch Whisky.

On Saturday, November 23, 2024, Edinburgh had its first snow of this winter, turning it into a winter wonderland.

On Sunday, November 24, 2024, I visited the magnificent medieval Glasgow Cathedral, the only one on the Scottish mainland to survive the Reformation of 1560 intact. I climbed the Glasgow Necropolis to get a fantastic view of Glasgow from the summit.

### CONCLUSIONS

The IEEE ComSoc Distinguished Lecturer Program (DLP) is excellent. By becoming and being an IEEE ComSoc Distinguished Lecturer, you could advance your professional development and boost your career.

By participating in a DLT, IEEE ComSoc Chapters and conferences could benefit from access to the most critical topics in communications technology today and tomorrow.

## IEEE ComSoc Distinguished Lecturer Michele Nogueira Visits Ecuador

Fostering Academic and Research Synergies

by Henry Carvajal Mora, IEEE ComSoc Ecuador Chapter Vice Chair

On October 21, the distinguished IEEE ComSoc lecturer and renowned researcher Dr. Michele Nogueira visited two of Ecuador's leading universities in Quito, Universidad de Las Américas (UDLA) and Escuela Politécnica Nacional (EPN), creating invaluable opportunities for academic collaboration and knowledge sharing in network security and telecommunications. Coordinated by IEEE ComSoc Ecuador, the visit marks a significant milestone for Ecuadorian academic institutions, enabling direct engagement with one of the foremost experts in network resilience and security.

Dr. Nogueira, an Associate Professor at the Federal University of Minas Gerais (UFMG) in Brazil, holds a doctorate in Computer Science from Sorbonne Université in France and is known for pioneering work in network survivability and resilience. Her current research focuses on developing network security intelligence through data science, explicitly emphasizing wireless networks, dependability, and machine learning applications in security. During her visit to Quito, she shared her expertise with IEEE members and explored collaborative possibilities between UFMG and Ecuadorian institutions.

Dr. Nogueira's first stop was at UDLA, where she was welcomed by Senior IEEE ComSoc members from the Networking and Telecommunications Engineering program: MSc. Julio Freire, Dr. Alexis Tinoco, Dr. Nathaly Orozco, and Dr. Henry Carvajal, vice-chair of IEEE ComSoc Ecuador. Also present at this gathering was the Dean of the Faculty of Engineering and Applied Sciences (FICA), Dr. Angel Jaramillo. The visit began with a breakfast meeting, providing a platform for discussing potential academic exchanges and collaborative projects. Among the primary goals was establishing joint coursework for IEEE student branches in Ecuador and Brazil and planning for student visits and research partnerships across disciplines like telecommunications, cybersecurity, and artificial intelligence.

Upon the conclusion of the meeting, Dr. Nogueira explored UDLA's laboratories. There, in a dynamic and creative environment, she met with ten students from diverse fields, each working on specific projects. These visits to various laboratories offered her a comprehensive view of the projects conducted at the university.



Our senior members with Michelle Nogueira at UDLA.

In the afternoon, Dr. Nogueira visited Escuela Politécnica Nacional, where she delivered an enlightening talk on "Empowering DDoS Attack Prediction through Machine Learning and Deep Learning" to a diverse audience of approximately 30 participants. The audience comprised roughly 15 students and 15 faculty members from the Faculty of Electrical Engineering. Her lecture emphasized the latest machine learning and deep learning methodologies in identifying and mitigating DDoS attacks, providing attendees with a glimpse into cutting-edge research with direct applications in securing network infrastructures.

While at EPN, Dr. Nogueira engaged with IEEE ComSoc Ecuador Chapter members and explored avenues for future collaboration.

IEEE Ecuador Section's role in facilitating Dr. Nogueira's visit underscores its commitment to providing its student and professional members access to world-class knowledge and fostering strong international connections. This visit has not only enriched Ecuadorian universities with global insights into telecommunications and cybersecurity. Still, it has also set the foundation for a fruitful partnership with UFMG, benefiting Ecuadorian and Brazilian IEEE communities.

As the IEEE Ecuador Section continues to bring prominent figures to inspire and connect with the local academic community, leaders like Dr. Michele Nogueira signal an exciting future for network security research and education in Ecuador.

**GCN** GLOBAL COMMUNICATIONS NEWSLETTER

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