INTERCON 2025

XXXII International Conference on Electronics, Electrical Engineering and Computing

Universidad Católica de Santa María (UCSM)

August 20th to 22nd, 2025

AREQUIPA, PERU

CONFERENCE PROGRAM

IEEE Peru Section

Universidad Católica de Santa María

https://intercon.org.pe | INTERCON | IEEEPERU | Urb. San José s/n Umacollo Arequipa, Peru - Main Entrance: San José Gate

Welcome Message

On behalf of the **Organizing Committee**, we are delighted to welcome you to the **XXXII International Conference on Electronics, Electrical Engineering and Computing – INTERCON 2025**, hosted by the **Universidad Católica de Santa María, in Arequipa, Peru**, from A**ugust 20th to 22nd, 2025**.

INTERCON has established itself as a **flagship conference** and a key platform for **knowledge exchange, collaboration, and technological advancement** within the I**EEE community in Latin America and beyond**. Each year, the conference brings together **researchers, students, professionals, and industry leaders** to share ideas, present innovations, and build **meaningful connections across disciplines**.

This year, INTERCON 2025 reflects our shared commitment to **engineering solutions** that respond to **regional and global challenges**. The program includes **plenary sessions, technical sessions, paper presentations, student competitions and challenges, and networking opportunities**, all designed to inspire interdisciplinary collaboration and foster real-world impact.

We are pleased to offer a **fully in-person experience**, designed to bring together participants from **academic institutions, research centers, and the professional world**, to engage in **meaningful discussions** and share experiences related to **technological innovation** and its application across sectors. We hope this event proves to be a **valuable and memorable experience**, offering you the opportunity to **explore new research, gain insights, acquire practical knowledge**, and build **long-lasting collaborations**.

Set in **Arequipa**, a **historic city nestled at the foot of the Misti volcano** and renowned for its **academic spirit, scenic beauty, and dynamic innovation ecosystem, INTERCON 2025** promises not only a **high-level scientific program**, but also an **enriching cultural experience**. We extend our sincere gratitude to the **authors,** the **technical committee**, and all members of the **organizing team** who have worked diligently to make this conference possible. We invite you to enjoy the **hospitality of southern Peru** and take part in shaping the f**uture of engineering, technology, and innovation** in the region and beyond.

As we celebrate this new edition of **INTERCON**, we reaffirm our commitment to advancing **research excellence, regional integration**, and the development of a **global scientific community**. We encourage all participants to **engage actively, contribute with their perspectives**, and take full advantage of this unique opportunity to **inspire and be inspired**.

Conference Organizing Committee

International Speakers and facilitators

International Keynote Speakers

Recognized experts with extensive academic and professional backgrounds in electronics, electrical engineering, and computing, these distinguished keynote speakers are committed to advancing technological innovation and fostering global collaboration. **Their contributions reflect the mission of INTERCON 2025 to promote transformative technologies that drive progress and positive change worldwide.**

Ph.D. Hugo Enrique Hernández

Dean of the School of Electrical and Computer Engineering (FEEC) and **Head of the Applied and Computational Electromagnetics Laboratory (LEMAC)** at the University of Campinas (UNICAMP), Brazil. **Full Professor at FEEC–UNICAMP**, with extensive experience coordinating international research collaborations across Europe, Asia, and the Americas. **His research spans advanced topics in integrated photonics and radar systems. Senior Member of the IEEE, a Fellow of OPTICA (formerly OSA), and Fellow of the Electromagnetics Academy.**

Ph.D. Andrea Calí

Professor in the Department of Computer Science at the University of Naples Federico II (UniNa). He holds a Ph.D. in Computer Science from the University of Rome "La Sapienza", Italy.
His research focuses on database theory, information integration, knowledge representation, semantic web technologies, and querying deep web sources. An accomplished author, he has contributed extensively to conference proceedings and academic journals in his field.

MBA Mery Isabel Vidal Vidal

Regional Manager of Clinical Engineering and Medical Devices for Peru, Colombia, and Mexico at Auna. She holds a Master's degree in Global Business Administration and serves as a **Professor of Clinical Engineering at the Pontificia Universidad Católica del Perú (PUCP).**
With over 17 years of experience, she has led teams focused on planning, acquisition, and management of health technologies. **She is recognized for her commitment to advancing Clinical Engineering in Latin America.**

MSc. Luis Iván Ruiz Flores

Chairman of the IEEE Mexico Council (2025–2026) and IEEE PES Chapter Chair – Morelos Section. Electrical Engineer with a Master's degree in Industrial Engineering and currently a **Ph.D. candidate in Environmental Engineering and Sustainable Technologies.** CEO of ARE Engineering and the Instituto Educativo y de Especialidades (IEE).
With over 25 years of experience in the electrical energy sector, **he has led projects for ETAP Latin America and INEEL, and has served as an international speaker and technical trainer.**

Ph.D. Jorge Luis Salazar Cerreño

Researcher at the Advanced Radar Research Center (ARRC) of the University of Oklahoma, USA. In addition, he is an **Associate Professor at the same university** and holds a Ph.D. in Electrical Engineering, with expertise in radar systems.
He is a Senior Member of the IEEE and a **reviewer for journals such as IEEE APS-S, IET, JTECH, and Radio Science Journal.** With over a decade of experience in remote sensing antennas, **he holds multiple patents and has authored numerous scientific publications.**

Ph.D. Saulo Alfredo Gómez Salcedo

Professor in the Department of Mechanical Engineering at the University of Concepción, Chile. He holds a Ph.D. in Aeronautical and Mechanical Engineering, with a specialization in space propulsion and energy. **One of his notable projects involves the simulation of a methane-oxygen combustion chamber for aerospace propulsion systems.**
He has contributed to technological innovation initiatives at companies such as Bradesco and Lote45, and has held academic positions in Colombia and Brazil.

The participation of these distinguished keynote speakers at INTERCON 2025 provides attendees with a valuable opportunity to gain in-depth perspectives on emerging technologies, global research developments, and practical engineering solutions. **Their keynote presentations are intended to inform, inspire critical reflection, and foster meaningful dialogue across a broad range of disciplines.**

Technical Program and Workshop Speakers

Professionals and companies sharing applied knowledge, practical experience, and innovative solutions through technical talks and workshops that address current challenges in the technological and industrial sectors.

INDUCONTROL

Sociedad Inducontrol Ingeniería S.A.C., a **Peruvian company with 34 years of experience in the field of automation,** leading the use of technology and developing engineering solutions for both the academic and industrial sectors.
The company has carried out impactful projects in industrial automation, process control, instrumentation, and SCADA systems, serving key industries such as mining, energy, manufacturing, and education.

INVEMTUN

Peruvian technology **company recognized for its constant innovation and its ability to adapt to changes in the business environment.** Its freshness and empathy enable the company to understand the needs of society, with a strong commitment to making a positive difference. At Inventum, innovation goes hand in hand with a deep commitment to society, **demonstrating that technology can be a powerful tool for collective well-being.**

DINAUT

Din Automatización is a **multinational company with over 28 years of experience leading the modernization, automation, and digitalization of industrial processes.** As a trusted **Solution Partner of Siemens and a Gold System Integrator of Rockwell Automation,** DINAUT recognized for driving industrial transformation through innovation, quality, and experience—acknowledgments that reflect a strong commitment **to offer a broad portfolio of efficient solutions and specialized support**.

Ph.D. Carlos Alberto Gordillo Andía

Mechanical Engineer from the Universidad Nacional de Ingeniería (UNI with a Master's in Thermal Engineering and a **Ph.D. in Energy Engineering (UNI–Moscow Aviation Institute)**. He holds diplomas in Energy Efficiency (PUCP–GIZ, Germany), Higher Education (UCSM), and Power Plants (Germany). **With 40+ years' experience**, he served in roles such as **Head of Operations at Tractores Andinos, Engineering Manager at MAPISA**, and **Engineering Program Director** (UNSA and UCSM), and **President of the Comisión de Ingenieros Mecánicos Electricistas (CIP–Arequipa).**

Eng. Gera Flores

Senior executive with over 12 years of experience leading teams in advanced analytics, artificial intelligence, and business intelligence **within multinational companies across the e-commerce, technology, and startup sectors.**
An Industrial Engineer with an MBA, she brings deep expertise in commercial strategy and excels at managing and aligning cross-functional teams across LATAM to drive business growth and innovation.

Eng. Guillermo Rafael Valdivia

Engineer specialized in the design of RF power amplifiers for base stations, with hands-on experience in WiMAX and Broadcast applications. Extensive experience in modeling GaN/GaAs transistors using ADS, SDD, among others, addressing trapping effects, self-heating, and pulsed measurements, with a strong background in semiconductor device physics. Practical experience: demoboard assembly, manual soldering, infrared testing and related. **IEEE MTT-S Regional Coordinator in Latin America,** organizer of international conferences, and author of journal publications.

Eng. Renato Alonso Hurtado Medina

Professional with experience in the design, product development, and manufacturing processes, with **notable participation in research projects funded by Concytec in the textile, medical, environmental, and fisheries sectors**, in collaboration with renowned universities and institutes. **He has worked in Silicon Valley's tech sector as Head of Engineering at Shellcatch Inc.**, and has provided consulting services to companies such as Engie Suez. **He is currently working at Ferreyros, optimizing reman processes in the Machining and Metalizing Workshop in La Joya, and leads BetelCraft.**

Eng. Toshiro Nagata

Experienced professional in offensive security and ethical hacking, specialized in infrastructure and web application exploitation. Currently serves as Offensive Security Lead at Open-Sec and as a lecturer at the Universidad Católica de Santa María. He's a Systems Engineer with a **Master's Degree in Systems Engineering**, author of "Introduction to Web Offensive Security", and has published Scopus-indexed research on offensive security. **He holds certifications such as CRTO, eCPPTv2, eWPT, eJPT, CND, ECDE, CASA, and MCITA.**

Eng. Darwin Carlos Quispe

Experienced professional with dual **Master's Degrees in Business Management and Extractive Metallurgy, and over 15 years of experience in the mining sector.**
He has developed his career in **leading mining companies such as BHP Billiton, Xstrata Copper, and Glencore, demonstrating solid expertise in copper concentrator operations and hydrometallurgical processing plants.**
He is currently part of Compañía Minera Antapaccay.

Eng. Néstor Alejandro Ccencho García

Electronic Engineer and IoT solutions specialist, **with over 8 years of experience leading technological projects in industrial sectors**. **Founder and CEO of Smelpro S.A.C.**, a Peruvian company known for its innovation in IoT, AI, and Industry 4.0, developing proprietary hardware and smart platforms. He holds a **Master's Degree in Artificial Intelligence and certifications in AWS Cloud and The Things Network (TTN)**. Currently, he drives digital transformation of the industrial sector through applied, scalable, and **and context-aware solutions tailored to national needs.**

With a forward-looking vision focused on transformation and progress, these speakers bring strategic and up-to-date perspectives on the technological and industrial landscape. Their participation in INTERCON 2025 not only enriches the academic program but also fosters a dynamic environment for knowledge exchange, where specialized expertise becomes a key driver of real-world impact.

General Conference Agenda

Conference Topics

INTERCON 2025 encompasses **a comprehensive selection of thematic areas** that reflect the **latest developments and priorities in electronics, electrical engineering, and computing.** These topics provide the conceptual framework for technical sessions, paper presentations, plenary discussions, and academic activities throughout the conference.

By highlighting these **key areas,** the program aims to **foster interdisciplinary research, practical application of knowledge,** and **meaningful exchange** between academia, industry, and the broader scientific community.

The official program of INTERCON 2025 is structured around the following technical tracks:

- T1. Artificial Intelligence and Machine Learning
- T2. Communications and Networking
- T3. Power, Energy, and Power Electronics
- T4. Biomedical Engineering & Healthcare Technologies
- T5. Robotics, Control, Instrumentation, and Automation
- T6. Multimedia Signal Proccesing and Analytics
- T7. Devices, Circuits, and Materials
- T8. Data Science and Computing Technologies
- T9. Education in Engineering and Technology
- T10. Innovation, Management, and Smart Production

Through this thematic structure, each participant will be able to connect their **expertise and interests** with the dynamics of the event, thereby enhancing their contribution to **academic dialogue** and the **technological progress** the region strives for. This alignment not only enriches the conference experience, but also reinforces the **collective pursuit of impactful, solution-oriented knowledge**.

Day 01 -Wednesday, August 20th, 2025

8:30 - 9:00	Registration	**Opening Ceremony** — William Morris Auditorium			
9:00 - 10:00		**Plenary Session - Panel 1 - Ph.D. Hugo Hernández -** *Pushing the Frontiers of Remote Sensing Technology: A Drone-Borne Synthetic Aperture Radar (SAR) System for Disruptive Underground Tomography* — **William Morris Auditorium**			
		Paper Presentation			
		Santa Maria Auditorium *Moderator: Eng. Kevin Guerra*	**Miguel Grau Auditorium** *Moderator: Ph.D. Fanny Lys Casado Peña*		
10:00 - 10:20		T1 - Paper ID: 111	T4 - Paper ID: 7	**Technical Presentation - 1 - INDUCONTROL** *Uso de Software gráfico y de simulación para Ingeniería* — William Morris Auditorium	**Workshop 1 - Ing. Nestor Ccencho** *Soluciones Iot en la Industria Peruana* — Venue to be confirmed
10:20 - 10:40		TT1 - Paper ID: 122	T4 - Paper ID: 66		
10:40 - 11:00		T1 - Paper ID: 163	T4 - Paper ID: 71		
11:00 - 11:20		T1 - Paper ID: 188	T4 - Paper ID: 120		
11:20 - 11:30		Break			
11:30 - 11:40				**Technical Presentation - 2 - INDUCONTROL** *Revolución de la Computación Cuántica: Fundamentos, principios y aplicaciones* — William Morris Auditorium	**Workshop 2 - Ing. Gera Flores** *Diseño práctico de experiencias educativas con IA y EdTech* — Venue to be confirmed
11:40 - 12:00		T1 - Paper ID: 160	T4 - Paper ID: 158		
12:00 - 12:20		T1 - Paper ID: 225	T4 - Paper ID: 161		
12:20 - 12:40		T1 - Paper ID: 237	T4 - Paper ID: 244		
12:40 - 13:00		T1 - Paper ID: 245	T4 - Paper ID: 45		
13:00 - 14:30		**Lunch**			
		Paper Presentation			
		Classroom E-110 *Moderator: Ph.D. Guillermo Kemper*	**Miguel Grau Auditorium** *Moderator: Ph.D. Julio Ronceros*		
14:30 - 14:50		T10 - Paper ID: 121	T3 - Paper ID: 44	**Technical Presentation - 3 - Ing. Gera Flores** *IA y EdTech: Integrando herramientas en la formación de nuevos profesionales* — William Morris Auditorium	
14:50 - 15:10		T10 - Paper ID: 150	T3 - Paper ID: 95		
15:10 - 15:30		T8 - Paper ID: 142	T3 - Paper ID: 104		
15:30 - 15:50		T2 - Paper ID: 80	T3 - Paper ID: 133		
15:50 - 16:00		Break			
16:00 - 16:20		T5 - Paper ID: 101	T3 - Paper ID: 164	**Workshop 3 - INDUCONTROL** *Programación de Computadoras Cuánticas: Algoritmos típicos y aplicaciones* — Venue to be confirmed	
16:20 - 16:40		T5 - Paper ID: 123	T3 - Paper ID: 165		
16:40 - 17:00		T5 - Paper ID: 125	T3 - Paper ID: 178		
17:00 - 17:20		T5 - Paper ID: 145	T3 - Paper ID: 137		
17:20 - 17:30		Allocated Free Time for Participants			
17:30 - 18:30		**Plenary Session - Panel 4 - Ph.D. Andrea Calí -** *Relational Knowledge Graphs: Past, Present and Future* — **William Morris Auditorium**			
18:30 - 19:00					

Day 02 - Thursday, August 21st, 2025

8:30 - 9:00	Registration				Parallel Activities: Challenges and Contests Competitive Robotics and Technological Innovation
9:00 - 10:00	**Plenary Session - Panel 2 - MSc. Luis Iván Ruiz Flores -** *Key Developments in Railways and Train Systems: Trends in Latin America* — **William Morris Auditorium**				
	Paper Presentation				
	Santa Maria Auditorium *Moderator: Ph.D. Fanny Lys Casado Peña*	**Miguel Grau Auditorium** *Moderator: Ph.D. Julio Ronceros*			
10:00 - 10:20	**T8 - Paper ID: 3**	**T5 - Paper ID: 170**	**Technical Presentation - 4 - Ing. Guillermo Rafael Valdivia** *Caracterización de Dispositivos Electrónicos* — **William Morris Auditorium**		
10:20 - 10:40	**T8 - Paper ID: 85**	**T5 - Paper ID: 197**			
10:40 - 11:00	**T8 - Paper ID: 117**	**T5 - Paper ID: 216**			
11:00 - 11:20	**T8 - Paper ID: 167**	**T5 - Paper ID: 221**			
11:20 - 11:30	Break				
11:30 - 11:40			**Technical Presentation - 5 - Ing. Renato Alonso H.** *Diseño enfocado al usuario y prototipado rápido para el desarrollo de hardware* — **William Morris Auditorium**		
11:40 - 12:00	**T8 - Paper ID: 220**	**T9 - Paper ID: 73**			
12:00 - 12:20	**T8 - Paper ID: 228**	**T9 - Paper ID: 93**			
12:20 - 12:40	**T8 - Paper ID: 12**	**T9 - Paper ID: 179**			
12:40 - 13:00	**T8 - Paper ID: 138**	**T10 - Paper ID: 226**			
13:00 - 14:30	**Lunch**				
	Paper Presentation				
	Santa Maria Auditorium *Moderator: Ph.D. Elva Castañeda*	**Miguel Grau Auditorium** *Moderator: Ph.D. Guillermo Kemper*			
14:30 - 14:50	**T6 - Paper ID: 189**	**T10 - Paper ID: 74**	**Technical Presentation - 6 - Ing. Toshiro Nagata** *Advanced Threat Simulation* — **William Morris Auditorium**	**Workshop 4 - INDUCONTROL** *Programación de robots industriales* — **Venue to be confirmed**	
14:50 - 15:10	**T10 - Paper ID: 238**	**T10 - Paper ID: 82**			
15:10 - 15:30	**T6 - Paper ID: 4**	**T10 - Paper ID: 83**			
15:30 - 15:50	**T1 - Paper ID: 208**	**T10 - Paper ID: 84**			
15:50 - 16:00	Break				
16:00 - 16:20	**T7 - Paper ID: 75**	**T10 - Paper ID: 105**	**Technical Presentation - 7 - Ing. Darwin Quispe** *Robotic Replacement of SAG Mill Liners* — **William Morris Auditorium**		
16:20 - 16:40	**T7 - Paper ID: 168**	**T10 - Paper ID: 87**			
16:40 - 17:00	**T3 - Paper ID: 124**	**T10 - Paper ID: 88**			
17:00 - 17:20	**T8 - Paper ID: 141**	**T10 - Paper ID: 110**			
17:20 - 17:30	Allocated Free Time for Participants				
17:30 - 18:30	**Plenary Session - Panel 5 - Ph.D. Jorge Luis Salazar Cerreño -** *Transforming the Future: Emerging Microwave and Millimeter-Wave Technologies for Radar and Remote Telecommunications* — **William Morris Auditorium**				
18:30 - 19:00					

Day 03- Friday, August 22nd, 2025

8:30 - 9:00	Registration				Parallel Activities: Challenges and Contests Competitive Robotics and Technological Innovation
9:00 - 10:00	**Plenary Session - Panel 3 - M.B.A. Mery Isabel Vidal Vidal -** *Clinical Engineers: Technology Managers Who Add Value to Healthcare Organizations* — **William Morris Auditorium**				
	Paper Presentation				
	Miguel Grau Auditorium *Moderator: Ph.D. Elva Castañeda*	**Clasroom C-302** *Moderator: B.Sc. Lucero Gamonal*			
10:00 - 10:20	T9 - Paper ID: 8	T1 - Paper ID: 49	**Technical Presentation - 8 - Dr. Carlos Alberto Gordillo Andía** *Eficiencia energética en sistemas térmicos* **William Morris Auditorium**		
10:20 - 10:40	T9 - Paper ID: 31	T10 - Paper ID: 202			
10:40 - 11:00	T9 - Paper ID: 40	T8 - Paper ID: 68			
11:00 - 11:20	T9 - Paper ID: 130	T09 - Paper ID: 214			
11:20 - 11:30	T9 - Paper ID: 34	T3 - Paper ID: 6			
11:30 - 11:40			**Technical Presentation - 9 - Ing. José Bohórquez Bendezú** *Tecnologías emergentes 4.0 aplicadas en la automatización* **William Morris Auditorium**		
11:40 - 12:00	T9 - Paper ID: 186	T1 - Paper ID: 114			
12:00 - 12:20	T10 - Paper ID: 128	T9 - Paper ID: 60			
12:20 - 12:40	T10 - Paper ID: 184	T9 - Paper ID: 37			
12:40 - 13:00	T10 - Paper ID: 118	T4 - Paper ID: 5			
13:00 - 14:30	**Lunch**				
	Paper Presentation				
	Miguel Grau Auditorium *Moderator: MSc. Jorge Heyul Chavez*	**Santa Maria Auditorium** *Moderator: Eng. Marco Jurado*			
14:30 - 14:50	T10 - Paper ID: 235	T10 - Paper ID: 99	**Workshop 5 - UMaker** *Lorawan y su papel fundamental en la industria del IoT* **Venue to be confirmed**	**Workshop 7 - Ing. José Bohórquez Bendezú (INVEMTUN)** *Automatización de procesos industriales con el simulador virtual: Factory I/O y el software TIA Portal* **Venue to be confirmed**	
14:50 - 15:10	T10 - Paper ID: 233	T10 - Paper ID: 205			
15:10 - 15:30	T10 - Paper ID: 119	T10 - Paper ID: 229			
15:30 - 15:50	T10 - Paper ID: 148	T10 - Paper ID: 231			
15:50 - 16:00	Break				
16:00 - 16:20	T10 - Paper ID: 154	T10 - Paper ID: 175	**Workshop 6 - Ing. José Bohórquez Bendezú (INVEMTUN)** *Automatización de procesos industriales con el simulador virtual: Factory I/O y el software TIA Portal* **Venue to be confirmed**		
16:20 - 16:40	T10 - Paper ID: 155	T3 - Paper ID: 25			
16:40 - 17:00	T10 - Paper ID: 173	T8 - Paper ID: 134			
17:00 - 17:20	Allocated Free Time for Participants				
17:20 - 17:30					
17:30 - 18:30	**Plenary Session - Panel 6 - Ph.D. Saulo Alfredo Gómez Salcedo -** *The Role of Electric Propulsion in the Decarbonization of Air Transport* — **William Morris Auditorium**				
18:30 - 19:00	**Closing Ceremony** — **William Morris Auditorium**				

Parallel Activities:

Challenges and Contests

Challenges and Contests Schedule

<table>
<tr><th></th><th>- Day 02 of INTERCON -
Thursday, August 21st, 2025</th><th>- Day 03 of INTERCON -
Friday, August 22nd, 2025</th></tr>
<tr><td>9:00 - 11:00</td><td>Qualification Rounds – Day 1
TRIALS</td><td>Qualification Rounds – Day 2
TRIALS</td></tr>
<tr><td rowspan="2">11:00 - 13:00</td><td>Autonomous Minisumo
(Master, Senior, Amateur)</td><td>Robot Combat – Preliminary Round
(3D, Antweight)</td></tr>
<tr><td>Walking Race
(Otto, Humanoid)</td><td>Robot Soccer
(Amateur)</td></tr>
<tr><td>13:00 - 14:00</td><td colspan="2">Lunch</td></tr>
<tr><td rowspan="3">14:00 - 19:00</td><td rowspan="2">Line Follower
(Amateur, Senior, Master)</td><td>Robot Soccer
(Senior)</td></tr>
<tr><td>Robot Combat – Preliminary Round
(3D, Antweight)</td></tr>
<tr><td>Minisumo Bluetooth/RC
(Amateur, Senior, Master)</td><td>Award Ceremony and Closing Session</td></tr>
</table>

Remarks

- The schedule is tentative. All competitions will be held sequentially, one after the other. Therefore, each participant must remain attentive to the overall progress of the event to avoid missing their turn.
- Every effort will be made to avoid running categories in parallel. In the event that this becomes necessary, team leaders will be informed in advance to prevent scheduling conflicts.
- Each competition day includes a homologation stage. However, if a participant wishes to complete this process in advance, they may do so in coordination with the judges.
- The homologation closing time is fixed. Participants who do not arrive on time for the homologation stage will not be allowed to compete in that day's categories.
- The schedule may be subject to change depending on the number of registered participants in each category. Any modifications will be announced during the group draw and assignment of participation slots.

Paper Presentation Agenda

Paper Presentation Tips

As part of the academic and professional exchange fostered by INTERCON 2025, **authors of accepted papers will deliver oral, on-site presentations** to a diverse audience of researchers, professionals, and students—**contributing to the event's mission of promoting meaningful dialogue and technological advancement.**

The first step in preparing your conference presentation is to identify the key message you want to communicate. **All presentations are limited to 10–15 minutes, followed by 5 minutes for questions**, so you will not have time to explain every detail of your work. The objective is to spark interest and engagement, not to deliver a full report.

To organize your presentation effectively, consider the following structure:

- Start with purpose: Clearly state the goal of your research and its relevance within your field.
- Provide brief context: A short literature overview will help situate your work within ongoing discussions in your area.
- Present your main findings: Focus on the core points, methodology, and key results.
- Conclude with emphasis: Reinforce the significance of your research and summarize its main contributions.

Tips for Preparing Your Slides

Your slides should enhance your talk, not serve as a script. Use them to visualize and reinforce your message.

- Prioritize clarity: Use bullet points and limit text. Incorporate visuals or data representations where appropriate.
- Practice your presentation: Rehearse with your slides to refine your delivery and ensure you stay within the time limit.
- Be ready for interaction: Prepare to respond to audience questions and feedback thoughtfully.

To ensure consistency and visual coherence across all sessions, **presenters are strongly encouraged to use the official INTERCON 2025 PowerPoint template**. The template is included as an attachment in the email along with this program.

T1. Artificial Intelligence and Machine Learning T4. Biomedical Engineering & Healthcare Technologies

Morning Shift: First Part

Day 01 -Wednesday, August 20th, 2025

8:30 - 9:00	Registration	**Opening Ceremony** — William Morris Auditorium			
9:00 - 10:00		**Plenary Session - Panel 1 - Ph.D. Hugo Hernández** — William Morris Auditorium			
		Paper Presentation			
		Santa Maria Auditorium *Moderator: Eng. Kevin Guerra*	**Miguel Grau Auditorium** *Moderator: Ph.D. Fanny Lys Casado Peña*		
10:00 - 10:20		**T1 - Paper ID: 111 -** Cross-Domain Cyberbullying Detection in Spanish: A Transfer Learning Approach with Theatrical Corpora and Adversarial Validation	**T4 - Paper ID: 7 -** MHUTEMP: An Open-Source IoT Solution for Reliable Real-Time Humidity and Temperature Monitoring in Healthcare Facilities	**Technical Presentation - 1 - INDUCONTROL** — William Morris Auditorium	**Workshop 1 - Ing. Nestor Ccencho** — Venue to be confirmed
10:20 - 10:40		**T1 - Paper ID: 122 -** Detection and Quantification of Citrus unshiu Mandarins with YOLO: A Comparative Analysis	**T4 - Paper ID: 66 -** Design and proof-of-concept of a low-cost non-invasive modular brushless motorization kit with regenerative braking for developing countries		
10:40 - 11:00		**T1 - Paper ID: 163 -** Improving Order Fulfillment in Pharmaceutical Supply Chains Using Deep Reinforcement Learning	**T4 - Paper ID: 71 -** Optimization of Pneumatic Finger Actuator Design for Soft Robotic Applications in Hand Therapy		
11:00 - 11:20		**T1 - Paper ID: 188 -** Detection of defects in industrial pipelines based on computer vision: a comparative study	**T4 - Paper ID: 120 -** Development of a Low-Cost Phantom for Quality Control of B and Doppler Modes in Ultrasound Systems Installed in Peruvian Health Centers		
11:20 - 11:30		**Break**			

T1. Artificial Intelligence and Machine Learning

T4. Biomedical Engineering & Healthcare Technologies

Morning Shift: Second Part

Day 01 -Wednesday, August 20th, 2025

		Paper Presentation			
		Santa Maria Auditorium *Moderator: Eng. Kevin Guerra*	**Miguel Grau Auditorium** *Moderator: Ph.D. Fanny Lys Casado Peña*		
11:30 - 11:40		**Break**			
11:40 - 12:00	**Registration**	**T1 - Paper ID: 160 -** Modeling and Simulation of Mechanical Failures in Three-Phase Induction Motors Using Support Vector Machines	**T4 - Paper ID: 158 -** Design of a robotic arm system for pipetting and sample handling in drug susceptibility experiments with mycobacterium tuberculosis bacteria	**Technical Presentation - 2 - INDUCONTROL** **William Morris Auditorium**	**Workshop 2 - Ing. Gera Flores** **Venue to be confirmed**
12:00 - 12:20		**T1 - Paper ID: 225 -** Therapeutic Chatbot for Suicidal Risk Teens Using Large Language Models	**T4 - Paper ID: 161 -** Design of the Compliant Mechanism of an Assistive Device for the Knee		
12:20 - 12:40		**T1 - Paper ID: 237 -** Building Generalizable Models for Student Retention: A Multi-Source Validation Framework for the Peruvian Higher Education Context	**T4 - Paper ID: 244 -** DengueAI Comparative Time-Series and Deep-Learning Modeling for Early Prediction of Dengue Outbreaks in Rural Peru Using Open Data		
12:40 - 13:00		**T1 - Paper ID: 245 -** Deep Learning for Non-Conventional Local Vehicle Detection and Classification using YOLOv11	**T4 - Paper ID: 45 -** Case Study in Biomechanical Engineering: Finite Element Stress Analysis of a Femur with a Surface Hip Spherical-joint Implant		
13:00 - 14:30		**Lunch**			

T2. Communications and Networking
T3. Power, Energy, and Power Electronics
T8. Data Science and Computing Technologies
T10. Innovation, Management, and Smart Production

Afternoon Shift: First Part

Day 01 -Wednesday, August 20th, 2025

		Paper Presentation			
		Classroom E-110 *Moderator: Ph.D. Guillermo Kemper*	**Miguel Grau Auditorium** *Moderator: Ph.D. Julio Ronceros*		
14:30 - 14:50	**Registration**	**T10 - Paper ID: 121 -** Integrated TPM, Machine Learning, and Layout Planning Model for Efficiency Improvement in Melamine Refining	**T3 - Paper ID: 44 -** Optimizing Neural Networks for SoH Prediction in Li-Ion Batteries: CNN, GRU, and GRU+Attention with Optuna	**Technical Presentation - 3 - Ing. Gera Flores** **William Morris Auditorium**	
14:50 - 15:10		**T10 - Paper ID: 150 -** Improving Metal Plate Utilization through IoT-Based Poka Yoke, AHP, and Ergonomic Design in an Electrical Transformer Company	**T3 - Paper ID: 95 -** A Study on the Impact of Fuel Cells as Energy Storage Devices in Distribution Networks		
15:10 - 15:30		**T8 - Paper ID: 142 -** Data Science Framework for Evaluation of Entrance Exams and Identification of Academic Patterns	**T3 - Paper ID: 104 -** Hybrid Controller with Voltage Hysteresis Control for Photovoltaic Systems with IoT Based Monitoring		
15:30 - 15:50		**T2 - Paper ID: 80 -** Proposal for a Customer Recommendation and Retention System for the Telecommunications Sector in Peru Using a Hybrid Bayesian and Knowledge-Based Agent	**T3 - Paper ID: 133 -** Detection of Anomalies and Outliers in Pattern Recognition Systems: Electric Power Consumption of Electro Puno S.A.A.		
15:50 - 16:00		**Break**			

T3. Power, Energy, and Power Electronics

T5. Robotics, Control, Instrumentation, and Automation

Afternoon Shift: Second Part

Day 01 -Wednesday, August 20th, 2025

		Paper Presentation			
		Classroom E-110 *Moderator: Ph.D. Guillermo Kemper*	**Miguel Grau Auditorium** *Moderator: Ph.D. Julio Ronceros*		
16:00 - 16:20		**T5 - Paper ID: 101 -** Satellite-Connected Buoy for Algal Bloom Monitoring in Arequipa Reservoirs	**T3 - Paper ID: 164 -** Wind Power Generation in Peru Exploratory Analysis and Prediction Using Outlier Detection and Supervised Learning Algorithms		
16:20 - 16:40		**T5 - Paper ID: 123 -** Design and Internal Flow Study Using CFD of an Elliptic Vortex Gripper with Variable Geometry for Polyethylene Bag Packaging	**T3 - Paper ID: 165 -** Solar Power Forecasting and Uncertainty Quantification Using SARIMA - Case Study of Tacna Solar Plant, Peru		
16:40 - 17:00	**Registration**	**T5 - Paper ID: 125 -** Real-Time EMG Classification for Bipedal Robot Control: A Hands-On Educational	**T3 - Paper ID: 178 -** A Systematic Review on Solar Trees: Design Efficiency and Sectoral Applications	**Workshop 3 - INDUCONTROL** **Venue to be confirmed**	
17:00 - 17:20		**T5 - Paper ID: 145 -** Development of a Magnetic Climbing System in Ventilation Ducts for Internal Cleaning Purposes	**T3 - Paper ID: 137 -** Evaluation of Predictive Models for the Quantification of Uncertainty in Fuel Consumption of the Vehicle Fleet in Paita (2022–2025)		
17:20 - 17:30		Allocated Free Time for Participants			
17:30 - 18:30		**Plenary Session - Panel 4 - Ph.D. Andrea Calí**		**William Morris Auditorium**	
18:30 - 19:00					

T5. Robotics, Control, Instrumentation, and Automation

T8. Data Science and Computing Technologies

Morning Shift: First Part

Day 02 - Thursday, August 21st, 2025

8:30 - 9:00	Registration				
9:00 - 10:00		**Plenary Session - Panel 2 - MSc. Luis Iván Ruiz Flores**			**William Morris Auditorium**
		Paper Presentation			
		Santa Maria Auditorium ***Moderator: Ph.D. Fanny Lys Casado Peña***	**Miguel Grau Auditorium** ***Moderator: Ph.D. Julio Ronceros***		
10:00 - 10:20		**T8 - Paper ID: 3 -** Assessing Performance and Scalability of Data Flows for an Urban Planning Application Using Apache NiFi	**T5 - Paper ID: 170 -** Adaptive autonomous landing system for quadcopter drones through descent assisted by visual recognition	**Technical Presentation - 4 - Ing. Guillermo Rafael Valdivia** **William Morris Auditorium**	
10:20 - 10:40		**T8 - Paper ID: 85 -** Integration of wearable technologies and sensors for monitoring vital signs, oxygenation, and glucose in older adults	**T5 - Paper ID: 197 -** Implementation of an Automated Aquaponic System for the Treatment of Aquaculture Wastewater in Arequipa, Peru		
10:40 - 11:00		**T8 - Paper ID: 117 -** Web Application Using Natural Language Processing to Teach Programming through Modeling to High School Students in Private Schools of Lima	**T5 - Paper ID: 216 -** Automatic Egg Chicken Classifier Applying Artificial Vision and Mechatronic Design		
11:00 - 11:20		**T8 - Paper ID: 167 -** From Trust to Code: A Comparative Performance Analysis of Ethereum and Polygon for Decentralized University Research Funding	**T5 - Paper ID: 221 -** Embedded Control System to Improve a Smart Greenhouse Performance		
11:20 - 11:30		**Break**			

T8. Data Science and Computing Technologies
T9. Education in Engineering and Technology
T10. Innovation, Management, and Smart Production

Morning Shift: Second Part

Day 02 - Thursday, August 21st, 2025

		Paper Presentation			
		Santa Maria Auditorium *Moderator: Ph.D. Fanny Lys Casado Peña*	**Miguel Grau Auditorium** *Moderator: Ph.D. Julio Ronceros*		
11:30 - 11:40		**Break**			
11:40 - 12:00	**Registration**	**T8 - Paper ID: 220 -** Proposal for a Soil Erosion Prediction System in Peruvian Territory Using Satellite Imagery	**T9 - Paper ID: 73 -** The use of pyrolysis for biofuel production, a systematic literature review	**Technical Presentation - 5 - Ing. Renato Alonso H.** **William Morris Auditorium**	
12:00 - 12:20		**T8 - Paper ID: 228 -** Enhancing Credit Card Fraud Detection with Clickstream-Based Behavioral Features	**T9 - Paper ID: 93 -** Vocational Prediction Method for High School Students Based on Machine Learning		
12:20 - 12:40		**T8 - Paper ID: 12 -** NLP-based mobile application for the automatic generation of learning activities in Peruvian universities	**T9 - Paper ID: 179 -** BLINK: A multiple-option and XOR Karnaugh map solver tool for logic synthesis		
12:40 - 13:00		**T8 - Paper ID: 138 -** Analysis of Feminicide in Peru Using Generative Models and Monte Carlo Simulation	**T10 - Paper ID: 226 -** Business project for the creation of a multivitamin product for children with Attention Deficit Hyperactivity Disorder using Design Thinking, Lean Startup, and Scrum in Metropolitan Lima		
13:00 - 14:30		**Lunch**			

T1. Artificial Intelligence and Machine Learning
T6. Multimedia Signal Proccesing and Analytics
T10. Innovation, Management, and Smart Production

Afternoon Shift: First Part

Day 02 - Thursday, August 21st, 2025

		Paper Presentation			
		Santa Maria Auditorium *Moderator: Ph.D. Elva Castañeda*	**Miguel Grau Auditorium** *Moderator: Ph.D. Guillermo Kemper*		
14:30 - 14:50	**Registration**	**T6 - Paper ID: 189 -** Development of a visual displacement and rotation detection system of an AGV robot for flat rural environments using Farneback optical flow on Raspberry Pi 5	**T10 - Paper ID: 74 -** Application of the Internet of Things (IoT) to Increase the Perfect Order Fulfillment Index in an Air Cargo Company through the Integration of SCOR, TPM, and SLP Approaches	**Technical Presentation - 6 - Ing. Toshiro Nagata** **William Morris Auditorium**	**Workshop 4 - INDUCONTROL** **Venue to be confirmed**
14:50 - 15:10		**T10 - Paper ID: 238 -** QoriTalk: An Adapted Text-to-Speech API Tailored for Peruvian Spanish	**T10 - Paper ID: 82 -** Increase in Equipment Availability through Predictive Maintenance with IoT and SMED in a Metalworking SME		
15:10 - 15:30		**T6 - Paper ID: 4 -** Machine learning-based prediction of photovoltaic panel soiling using satellite and spectral index	**T10 - Paper ID: 83 -** Eco-friendly thermal panel for low-cost housing in cold climates		
15:30 - 15:50		**T1 - Paper ID: 208 -** ANFIS-Based Health Index Estimation for Power Transformers with a Comparative Perspective on Fuzzy Logic for Predictive Maintenance	**T10 - Paper ID: 84 -** Detection of potato crops in advanced vegetative stage using Sentinel 2 with remote sensing in the Peruvian Andes		
15:50 - 16:00		**Break**			

T3. Power, Energy, and Power Electronics
T7. Devices, Circuits, and Materials
T8. Data Science and Computing Technologies
T10. Innovation, Management, and Smart Production

Afternoon Shift: Second Part

Day 02 - Thursday, August 21st, 2025

Paper Presentation

		Santa Maria Auditorium *Moderator: Ph.D. Elva Castañeda*	Miguel Grau Auditorium *Moderator: Ph.D. Guillermo Kemper*		
16:00 - 16:20	Registration	**T7 - Paper ID: 75-** Nanoexplosives Devices Based in Porous Silicon Technology Impregnated with Sodium Perchlorate	**T10 - Paper ID: 105 -** Digital strategy problem and limits to enhance sales processes in fast food companies	Technical Presentation - 7 - Ing. Darwin Quispe William Morris Auditorium	
16:20 - 16:40		**T7 - Paper ID: 168 -** Comparative Analysis of Mechanical Properties of Banana Peel-Based Biocomposites Through ASTM Standardized Mechanical Testing	**T10 - Paper ID: 87 -** Increasing efficiency in PVC production equipment using an improvement model based on IoT, Big Data, and Planned Maintenance		
16:40 - 17:00		**T3 - Paper ID: 124 -** Design hybrid solar-battery methodology for remote communities	**T10 - Paper ID: 88 -** Improvement model to increase the efficiency of the plastic injection process through planned maintenance, autonomous, SMED, 6R		
17:00 - 17:20		**T8 - Paper ID: 141 -** Unsupervised Clustering of High-Dimensional Atmospheric Data Using the K-Means Algorithm	**T10 - Paper ID: 110 -** Improvement of productivity in the assembly of industrial doors using Lean 4.0 and Automated Picking		
17:20 - 17:30		Allocated Free Time for Participants			
17:30 - 18:30		**Plenary Session - Panel 5 - Ph.D. Jorge Luis Salazar Cerreño**			William Morris Auditorium
18:30 - 19:00					

T1. Artificial Intelligence and Machine Learning
T3. Power, Energy, and Power Electronics
T8. Data Science and Computing Technologies
T9. Education in Engineering and Technology
T10. Innovation, Management, and Smart Production

Morning Shift: First Part

Day 03- Friday, August 22nd, 2025

8:30 - 9:00					
9:00 - 10:00		**Plenary Session - Panel 3 - M.B.A. Mery Isabel Vidal Vidal** — **William Morris Auditorium**			
		Paper Presentation			
		Miguel Grau Auditorium ***Moderator: Ph.D. Elva Castañeda***	**Clasroom C-302** ***Moderator: B.Sc. Lucero Gamonal***		
10:00 - 10:20		**T9 - Paper ID: 8 -** Web platform for the improvement of academic performance in a private higher education institution in Peru using the agile SCRUM approach	**T1 - Paper ID: 49 -** Detecting Anomalies in Mining Engine Oil: A Convolutional Autoencoder Approach		
10:20 - 10:40		**T9 - Paper ID: 31 -** Multi-Criteria Decision-Making for Selecting Key Performance Indicators in Bus Rapid Transit Fleet Maintenance	**T10 - Paper ID: 202 -** Proposal to improve service level in HDPE barge deliveries using TSM-IoT, DDMRP, and Digital Twins		
10:40 - 11:00	**Registration**	**T9 - Paper ID: 40 -** Comprehensive review of gamification in basic education located in Latin American	**T8 - Paper ID: 68 -** A Lightweight Interactive System for Fraud Detection using Ensemble and Anomaly-Based Machine Learning Methods	**Technical Presentation - 8 - Dr. Carlos Alberto Gordillo Andía** **William Morris Auditorium**	
11:00 - 11:20		**T9 - Paper ID: 130 -** Surge Protection Against Lightning in a 33 kV Transmission Line	**T09 - Paper ID: 214 -** A Graphical User Interface for Modeling and Assessment of Islanded Microgrids Operation		
11:20 - 11:30		**T9 - Paper ID: 34 -** Proposed Model to Improve Efficiency in a Textile SME through the Application of TPM Tools with an IoT-Based Approach	**T3 - Paper ID: 6 -** XGBoost Based Day Ahead Solar Energy Generation Forecasting Using Trends and Periodicity Features in Historical and Weather Data		
11:30 - 11:40				**Technical Presentation - 9 - Ing. José Bohórquez** **William Morris Auditorium**	

T1. Artificial Intelligence and Machine Learning
T4. Biomedical Engineering & Healthcare Technologies
T9. Education in Engineering and Technology
T10. Innovation, Management, and Smart Production

Morning Shift: Second Part

Day 03- Friday, August 22nd, 2025

		Paper Presentation			
		Miguel Grau Auditorium *Moderator: Ph.D. Elva Castañeda*	**Clasroom C-302** *Moderator: B.Sc. Lucero Gamonal*		
11:40 - 12:00	**Registration**	**T9 - Paper ID: 186 -** Systematic Review of University Academic Performance Supported by AI-Based Screen Readers	**T1 - Paper ID: 114 -** Intelligent Frameworks for Enhancing Disaster Response through AI-Driven Predictive Modeling and Resource Allocation Optimization	**Technical Presentation - 9 - Ing. José Bohórquez Bendezú** **William Morris Auditorium**	
12:00 - 12:20		**T10 - Paper ID: 128 -** Improving on-time delivery for a footwear company through SLP, 5S methodology, and anthropometry	**T9 - Paper ID: 60 -** Leveraging Generative Models for Efficient Policy Learning in Offline Reinforcement Learning		
12:20 - 12:40		**T10 - Paper ID: 184 -** Analysis of a low OTIF performance in a Footwear Company and an Innovative Proposal Using SMED, Autonomous Maintenance, RFID in a Lean Green Framework	**T9 - Paper ID: 37 -** Analysis of Learning Management System of Selected Private HEI: An Assessment		
12:40 - 13:00		**T10 - Paper ID: 118 -** Electronic Service Quality and Customer Satisfaction in Technology Product Platforms in Lima, Peru	**T4 - Paper ID: 5 -** Development respiratory auscultation device supported by augmented reality and artificial intelligence aimed for clinical training		
13:00 - 14:30		**Lunch**			

T10. Innovation, Management, and Smart Production

Afternoon Shift: First Part

Day 03- Friday, August 22nd, 2025

		Paper Presentation			
		Miguel Grau Auditorium ***Moderator: MSc. Jorge Heyul Chavez***	**Santa Maria Auditorium** ***Moderator: Eng. Marco Jurado***		
14:30 - 14:50	**Registration**	**T10 – Paper ID: 235 –** Development of Healthy Snacks for Dogs: Value Proposition through Lean Startup as a Strategy Integrated with Design Thinking	**T10 – Paper ID: 99 –** A strategic model for evaluating and selecting suppliers based on sustainability for a mining company	**Workshop 5 - UMaker** **Venue to be confirmed**	**Workshop 7 - Ing. José Bohórquez Bendezú (INVEMTUN)** **Venue to be confirmed**
14:50 - 15:10		**T10 – Paper ID: 233 –** Design of a Value Proposition for Pitahaya and Oat Cookies for Adults Aged 18 to 39 Suffering from Constipation, Using Design Thinking and the Value Proposition Canvas in Lima – Peru	**T10 – Paper ID: 205 –** Lean Waste Prioritization in Integration with Sustainability and Circular Manufacturing		
15:10 - 15:30		**T10 – Paper ID: 119 –** Integration of Smart Maintenance and SMED to Improve Cutting Area Efficiency in Plastic Bag Production	**T10 – Paper ID: 229 –** Reduction of Lean waste in a retail pharmaceutical warehouse using ABC and 5S tools		
15:30 - 15:50		**T10 – Paper ID: 148 –** Process flow for material recovery and sustainability assessment about recycling ultra thin photovoltaic panels	**T10 – Paper ID: 231 –** Methodology to Reduce Stockouts in a Furniture Store Using Forecasting Tools		
15:50 - 16:00		**Break**			

T3. Power, Energy, and Power Electronics
T8. Data Science and Computing Technologies
T10. Innovation, Management, and Smart Production

Afternoon Shift: Second Part

Day 03- Friday, August 22nd, 2025

		Paper Presentation			
		Miguel Grau Auditorium *Moderator: MSc. Jorge Heyul Chavez*	**Santa Maria Auditorium** *Moderator: Eng. Marco Jurado*		
16:00 - 16:20	**Registration**	**T10 - Paper ID: 154 -** Automated System for the Sanding and Oiling Process of Cachimbo and Huayruro Wood in Dining Table Manufacturing	**T10 - Paper ID: 175 -** Digital Twin–Enabled IoT Architecture for Early Fault Detection and Integrated Forklift Monitoring Using an ESP32 Platform	**Workshop 6 -** **Ing. José Bohórquez Bendezú (INVEMTUN)** **Venue to be confirmed**	
16:20 - 16:40		**T10 - Paper ID: 155 -** Performance improvement model based on TPM- IoT, SMED and process standardization in a metalworking line	**T3 - Paper ID: 25 -** Design of an MPPT Algorithm Based on Neural Networks and Fuzzy Logic for Different Photovoltaic Panel Technologies		
16:40 - 17:00		**T10 - Paper ID: 173 -** Operational Efficiency Enhancement through Industry 4.0 Technologies: A Case Study in a Peruvian Metalworking Company	**T8 - Paper ID: 134 -** Recognition of Temporal Patterns in Time Series for the Prediction of Dengue Outbreaks in Peru		
17:00 - 17:20		Allocated Free Time for Participants			
17:20 - 17:30					
17:30 - 18:30		**Plenary Session - Panel 6 - Ph.D. Saulo Alfredo Gómez Salcedo**		**William Morris Auditorium**	
18:30 - 19:00		**Closing Ceremony**		**William Morris Auditorium**	


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