



ANDESCON is the biannual Technical and Scientific Conference of the Andean Council of the IEEE that brings together IEEE professionals and scientists from the Andean countries. The twelfth edition of this IEEE event will be held in the wonderful city of Cusco, Perú.

The ANDESCON conference is an opportunity for professional members, academics, researchers and industrialists to will meet and present the developments and technological advances that move the Andean region countries.



# Andescon 2024

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# IEEE ANDESCON 2024

## Program - Block

### Wednesday, September 11

### Thursday, September 12

### Friday, September 13

Time	Graduation Hall	Classroom "A"	Classroom "B"	Time	Main Hall	Graduation Hall	Classroom "A"	Time	Main Hall	Graduation Hall	Classroom "A"
08:30 16:00	Event registration and material kits			08:30 16:00	Event registration and material kits			08:30 16:00	Event registration and material kits		
09:00 12:00	Paper Track <b>T5</b> Circuits and Systems	Paper Track <b>T2</b> Communications	Workshop Latinoamericano de Machine Learning	09:00 12:00	Paper Track <b>T3</b> Power and Energy	Paper Track <b>T4</b> Robotics and Automation	Paper Track <b>T9</b> Computational Intelligence	09:00 12:00	Paper Track <b>T1</b> Computing	Paper Track <b>T3</b> Power and energy	Paper Track <b>T4</b> Robotics and Automation
12:00 13:00	Phd. Manuel Delgado-Restituto (España) IEEE CAS <i>"Neuroengineering Principles: Circuits and Systems"</i> (Graduation Hall)			12:00 13:00	Prof. Dr.Ing. Falko Dressler (Alemania) Technische Universitat Berlin <i>"6G Edge Computing: Improving Coverage and Resilience"</i> (Main Hall)			12:00 13:00	Phd. Nicanor Quijano Silva (Colombia) IEEE RAS <i>"Population Games and Evolutionary Dynamics: A New Paradigm in Control"</i> (Main Hall)"		
13:00 15:00	Free time to go out for lunch			13:00 15:00	Free time to go out for lunch			13:00 15:00	Free time to go out for lunch		
15:00 17:30	IEEE CASS Tour Peru 2024	Paper Track <b>T10</b> Smart Cities and Smart Mobility	Workshop Latinoamericano de Machine Learning	15:00 15:30 15:30 17:30	Paper Track <b>T3</b> Power and Energy	Paper Track <b>T4</b> Robotics and Automation	Paper Track <b>T9</b> Computational Intelligence  Paper Track <b>T7</b> Engineering Education	15:00 17:30	Paper Track <b>T1</b> Computing	Paper Track <b>T7</b> Engineering Education	Paper Track <b>T6</b> Bioengineering
17:30 18:00	Displacement Cusco Municipal Theater			17:30 18:00	Displacement UNSAAC University Paraninfo			17:30 18:00	Displacement UNSAAC University Paraninfo		
18:00 19:00	Phd. Dejan Milojicic (USA) Hewlett Packard Labs & IEEE Computer Society <i>"Technology Megatrends"</i>			18:00 19:00	Pdh. Benjamin Castañeda (Perú) Universidad de Rochester <i>"Developing health technologies for inclusive medical care: the success case of asynchronous tele-ultrasound in Peru"</i>			18:00 19:00	Msc. José Ignacio Castillo (México) IEEE R9 Regional Director Elect <i>"Advanced Networks &amp; Special Data Centers"</i>		
19:00 20:00	Andescon Opening Ceremony			19:00 21:00	Dinner: República del Pisco (Calle Plateros 354, Cusco)			19:00 20:00	Andescon Closing Ceremony		
20:00 21:00	Coctel Networking: Cusco Municipal Theater							20:00 21:00	Dinner: Paraninfo UNSAAC		

# IEEE ANDESCON 2024 Program

## Wednesday, September 11

### Activities of the Day

### Afternoon Activities

Activities of the Day			Afternoon Activities				
Time	Graduation Hall	Classroom "A"	Classroom "B"	Time	Graduation Hall	Classroom "A"	Classroom "B"
08:00 16:00	Event registration and material kits		Workshop Latinoamericano de Machine Learning	15:00 15:15	IEEE CASS Tour Peru 2024	Paper ID 3 Novel Methodology for the Modification of Parameters in Control Units of Electric Vehicles	Workshop Latinoamericano de Machine Learning
09:00 09:15		Paper ID 4 Directional Coupler For 3GHz Bands		15:15 15:30	Phd. Ricardo Reis: "Conference: Trends on EDA (Electronic Design Automation)"	Paper ID 11 Development Of An Iot Platform For Managing Promotional Products In Commercial Establishments	
09:15 09:30		Paper ID 96 Experimental Evaluation of Multiantenna Spectrum Sensing: Unsupervised Learning Approach		15:30 15:45		Paper ID 90 Stochastic Optimization of Energy Resources in Smart Homes	
09:30 09:45		Paper ID 138 Wireless Network Design for Meteorological Stations in Galapagos Archipelago		15:45 16:00	Phd. Victor Grimblatt "Conference: Digital Integrated Circuits Design Flow"	Paper ID 167 Geospatial Digital Twins for the Development of Smart Sustainable Campus Initiatives in Ecuadorian Catholic Universities	
09:45 10:00		Paper ID 177 Network traffic analysis through flows and packets with machine learning		16:00 16:15		Paper ID 226 Waze for Cities: an effective alternative for traffic study	
10:00 10:15		Paper ID 186 Analysis of urban displacements in pandemics using CovWay and GIS applications		16:15 16:30	Phd. Carlos Silva Cárdenas "Conference: Energy Harvesting"	Paper ID 216 A methodological proposal to analyze PM2.5 AQI using a mobile station under traffic conditions: Case study in "Lima Centro"	
10:15 10:30	Paper ID 193 RSSI-Based Indoor Localization Using Machine Learning for Wireless Sensor Networks: A Recent Review	16:30 16:45		Paper ID 264 Augmented reality for guiding procedures, consultations, and localization in hospitals			
10:30 10:45	Networking Break			16:45 17:00	Phd. Carlos Silva Cárdenas "Conference: IEEE CASS Membership Opportunities"	Paper ID 311 Optimal deployment of a wireless sensor network to measure the air quality in the city of Arequipa	
10:45 11:00	Paper ID 65 A Heterogeneous Multi-RISCV Architecture for Image Processing and Computer Vision Applications	Paper ID 205 Enhancing Lo RaWAN RSSI Prediction Accuracy with Weather-Aware Machine Learning Models		17:15 17:30			
11:00 11:15	Paper ID 81 Feedback + Feedforward Speed Control for a DC Motor Using an ARM Platform	Paper ID 239 Assessing the Interplay between Localization Accuracy and Interference in IRS-assisted Links		17:00 17:15	Networking Break		
11:15 11:30	Paper ID 114 Mobile Air Quality Sensor System for GIS Mapping, Study Case in San Salvador City.	Paper ID 274 Evaluating Propagation Models for IIoT in Underground Mining: an Experimental Comparative Study in Underground Coal Mines	17:30 18:00	Displacement Cusco Municipal Theater			
11:30 11:45	Paper ID 140 Parallel and series piezoelectric circuit energy harvesting	Panel: Communications	18:00 19:00	Phd. Dejan Milojicic (USA) Hewlett Packard Labs & IEEE Computer Society "Technology Megatrends"			
11:45 12:00	Paper ID 284 Square voltage power supply design methodology for dielectric barrier discharge applications		19:00 20:00	Andescon Opening Ceremony			
12:00 13:00	Phd. Manuel Delgado-Restituto (España) IEEE CAS "Neuroengineering Principles: Circuits and Systems" (Graduation Hall - UNSAAC University Parainfo)		20:00 21:00	Coctel Networking: Cusco Municipal Theater			
13:00 15:00	Free time to go out for lunch						

## Activities of the Day

## Thursday, September 12

## Afternoon Activities

Time	Main Hall	Graduation Hall	Classroom "A"	Time	Main Hall	Graduation Hall	Classroom "A"	
08:00 16:00	Event registration and material kits			15:00 15:15	Paper ID 21 Method to evaluate the ampacity of underground cables in medium voltage electrical networks in operation	Paper ID 153 A Novel Identification Method for Continuous-Time Stochastic Systems Utilizing Tsai's Approximation and Sampled Data	Paper ID 268 Optimization of sensor measurements to grinding control process using machine learning techniques	
09:00 09:15	<b>Tutorial: "Novel Tendencies on Modelling and Simulation using PowerFactory"</b> - <b>Dr. Francisco Gonzalez Longatt</b>	Paper ID 39 Robust Collision-Free Guidance for Multicopters in Airspaces with Numerous Flying Obstacles	Paper ID 54 Road Multiclass Semantic Segmentation From High Resolution Satellite Images Using Convolutional Neural Networks	15:15 15:30	Paper ID 25 Methodology for the design solar thermal station: Case study of 150 MW for Arequipa	Paper ID 155 Control of a Stewart platform using a MIMO PID controller	Paper ID 313 Frame deletion detection in videos using Convolutional Neural Networks	
09:15 09:30		Paper ID 75 An Adaptive 2DOF-Nonlinear PID Controller for Nonlinear Processes with Dominant Delay	Paper ID 86 Optimizing Energy Storage Systems Deployment in Smart Grids	15:30 15:45	Paper ID 29 Assesment of Frequency Response Uncertainty on Power Systems with RES	Paper ID 171 Potato crop irrigation system in Peru based on IoT and machine learning	Paper ID 5 Elevating STEM Education: A Ground Station's Role in Encouraging Aerospace Science Learning	
09:30 09:45		Paper ID 76 Comparative Assessment of PID Controller Strategies for Nonlinear Systems with Time-Varying Parameters	Paper ID 108 Deep Learning Approaches for Rust Identification in Ecuadorian Agriculture	15:45 16:00	Paper ID 46 Analysis of the Brazilian operating reserve through instantaneous variation of wind generation	Paper ID 196 Person-Following Robots with Social Robot Motion from Control Design, Simulation Results	Paper ID 13 Empowering Education Through Marker-Based Augmented Reality: Bridging Gaps in Quality and Accessibility	
09:45 10:00		Paper ID 80 Machine Learning Techniques used in the Design of an Automatic Terrain Identifier for a Rover Robot	Paper ID 157 MIKA, a chatbot with sentimental responses generated by cyclegan and reinforcement learning	16:00 16:15	Paper ID 52 Feature Selection for Forecasting of Energy Spot Price in the Colombian Market	Paper ID 198 Trajectory Tracking Control of a Car-Like Robot, Simulation Results	Paper ID 15 Implementation of a MouseTrap Car as a teaching tool to study damped	
10:00 10:15		Paper ID 88 Fuzzy-PI Controller of a Soft Knee Exoskeleton for the Rehabilitation of a Baby Leg dummy	Paper ID 160 Deep reinforcement learning via nonlinear model predictive control for thermal process with variable longtime delay	16:15 16:30	Paper ID 59 Efficiency Calculation for a 90 MVA Vertical Shaft Hydro-Alternator using the Calorimetric Method	Paper ID 199 Development of a Robotic Arm Platform with Interchangeable Sensors for Remote Inspection of Industrial Plants	Paper ID 47 Impact of Augmented Reality on the Teaching of Anatomy: A Study in Health Sciences Students	
10:15 10:30		Paper ID 103 Smart Agriculture: Visualization of Solanum Lycopersicum Seed Germination through Computer Vision and Supervised Learning	Paper ID 162 Exploring Supervised and Unsupervised Learning Techniques to Detect Ground-Glass Opacities in CT Images for COVID-19	16:30 16:45	Paper ID 83 Ampacity Calculation of Submarine Cable Systems based on IEC 60287 and CIGRE's Guidelines.	Paper ID 200 Social Robot Motion for Low-Velocity Indoor Navigation: Simulation Results	Paper ID 94 Educational prototype for teaching automatic control. Application to speed control of a direct current motor	
10:30 10:45		<b>Networking Break</b>			16:45 17:00	Paper ID 97 Digitalization of a Hybrid Microgrid based on IEC 61850 Standard	Paper ID 202 A double deep Q-learning network-based path planning approach for autonomous mobile robots in mining environments	Paper ID 100 Flexible laboratory for teaching automation in the Era of Industry 4.0
10:45 11:00		Paper ID 119 Model Development and Simulation of a 3-DOF Manipulator Robot for Trajectory Control Using Artificial Intelligence	Paper ID 163 A NARX-AMB Hybrid Approach for Reduced-Order Modeling of a MIMO Heating-Pressing Process	17:00 17:15	Paper ID 98 Optimal Placement of BESS for Improving the Reliability in Radial Feeders	Paper ID 208 Benchmark of intelligent schedulers in an adaptive PI by tabulated gains for DC motor speed control	Paper ID 117 Network traffic analysis through flows and packets with machine learning	
11:00 11:15		Paper ID 132 On the Equivalence between Mixed-Integer Linear and Linear Programming Problems in MPC for Photovoltaic Plants with Energy Storage	Paper ID 179 A Sharper Look: Edge Detection and Light-Weight 3D Vision Transformers for Parkinsonian Disorder Diagnosis on MRI Imaging	17:15 17:30	<b>Networking Break</b>			
11:15 11:30		Paper ID 142 Exploring LQI Control in Sampled-Data Systems: A Numerical Study for First-Order Systems	Paper ID 181 An Application of Convolutional Neural Networks for Archaeological Andean Pottery					
11:30 11:45	Paper ID 303 Implementation of a Grid-Following Inverter Control Model with Negative Sequence Current Injection for Unbalanced Faults in MATLAB	Paper ID 150 On the Use of Prescribed-Time Super-Twisting for Fusing Multiple Redundant Noisy Measurements	Paper ID 185 A Skills-based Approach to Policy Creation in Environment Evolution Learning	<b>Pdh. Benjamin Castañeda (Perú)</b> Universidad de Rochester <i>"Developing health technologies for inclusive medical care: the success case of asynchronous tele-ultrasound in Peru"</i>				
11:45 12:00	Paper ID 20 Transient recovery voltage effects in circuit breakers involved in series-connected air core reactors	Paper ID 151 Control Allocation for an One-DOF Thrust-Vectored Quadcopter	Paper ID 213 On multi-horizon forecasting of copper price returns using deep learning techniques					
12:00 13:00	<b>Prof. Dr.Ing. Falko Dressler (Alemania)</b> Technische Universitat Berlin <i>"6G Edge Computing: Improving Coverage and Resilience"</i> (Main Hall - UNSAAC University Paraninfo)			19:00 20:00	<b>Dinner: República del Pisco</b> (Calle Plateros 354, Cusco)			
13:00 15:00	Free time to go out for lunch			20:00 21:00				

# IEEE ANDESCON 2024 Program

## Friday, September 13

### Activities of the Day

### Afternoon Activities

Time	Main Hall	Graduation Hall	Classroom "A"	Time	Main Hall	Graduation Hall	Classroom "A"	
08:00 16:00	Event registration and material kits			15:00 15:15	Paper ID 220 Application of augmented reality and its impact on the historical and cultural management of a tourist center in northern Peru	Paper ID 137 Ladder Diagram programming systematization through active PBL teaching	Paper ID 40 Portable Colposcopic Device Based On Artificial Intelligence	
09:00 09:15	Paper ID 1 Application for Secure Password Self-service Management in Local Active Directory (AD) Environments	Paper ID 123 On the Multivariable Control of a Three-Level Flying Capacitor Buck DC-DC Converter	Paper ID 230 Comparative Analysis and Design Optimization of Drone Arms with Vibration Assessment	15:15 15:30	Paper ID 231 Denosing and filtering aberration-corrected STEM images of III-V semiconductor heterostructures	Paper ID 166 Development of a training software based on virtual reality interaction and simulation to reduce costs and risks in training on the use of heavy machinery in the mining industry	Paper ID 42 Analysis and Classification of Tremors in a Parkinson's Disease Simulator using Machine Learning	
09:15 09:30	Paper ID 28 Comparing Multi-Objective Surrogate Models For Binary Petroleum Well Placement	Paper ID 124 Li-ion Battery SOC Estimation via Gaussian Sum Filtering and Piecewise Linear Approximation	Paper ID 259 Convergence implemented in Unicycle Mobile Robots using QR codes and vision computer	15:30 15:45	Paper ID 252 A Meta-Analysis of Blockchain Acceptance Research and New Theory Directions	Paper ID 169 Mass Movement Risk Assessment with Drone and GPS Technology: A Case Study in Quito, Ecuador	Paper ID 44 Graphical User Interface to Automate the Acquisition of sEMG Signals in Users With Transradial Amputation	
09:30 09:45	Paper ID 43 Generative AI for Consumer Communications: Classification, Summarization, Response Generation	Paper ID 145 Connector Level Electric Vehicle Smart Charging Considering Energy Distributed Resources	Paper ID 275 Design and Implementation of an Automated Electric Oven with LOGO! Controllers for Curing Electric Panel Components	15:45 16:00	Paper ID 254 Impact of the implementation of an information system in the management of materials tickets in a telecommunications and systems company	Paper ID 211 Times optimization in the installation of loading pipes in underground mining operation	Paper ID 45 Nanoparticle-bearing chitosan implants for in situ stem cell reprogramming	
09:45 10:00	Paper ID 51 Shaping the Future of Fog Computing Economics: A Systematic Review of the Most Important Business Models	Paper ID 152 Application of a Squirrel Cage Induction Machine as a Dynamometer for Motor Heat-run Tests	Paper ID 288 Development of an Intelligent Irrigation System for a Rose Cultivation Based on IoT	16:00 16:15	Paper ID 287 Automation of tribological analysis of mining equipment through machine learning	Paper ID 217 Problems Affecting Physics Learning and the Implementation of Flipped Classroom as a Solution Strategy	Paper ID 129 Comparative Assessment of SAMM and MONAI Algorithms in Spleen Image Segmentation: Approaches and Metrics	
10:00 10:15	Paper ID 78 NLP Models to Clarify Degree and Title Regulations in Peruvian Universities	Paper ID 237 Improving Voltage Magnitude Regulation in Microgrids: A Heuristic Algorithm Enhancement	Paper ID 304 Floating System for Automatic Handling of Aquaculture Feeders	16:15 16:30	Paper ID 305 Detection of Anemia through Nail Images using Convolutional Neural Networks	Paper ID 229 Assessing the impact of Agile frameworks on undergraduate Software Development Education	Paper ID 158 Design and Implementation of a 3D-Printed Exoskeleton for Hand Rehabilitation in Osteoarthritis	
10:15 10:30	Paper ID 113 User Centered Design Methods in Software Development: A Case Study in a Peruvian Office of Financial Aid and Scholarships	Paper ID 238 CPT-based Active Power Filter with Repetitive Controller and Capacitor Voltage Feedforward under Non-Ideal Grid		16:30 16:45		Paper ID 270 WiFi Lab Guide UDFJC	Paper ID 215 Ventilator-dependent Patients with no Respiratory Illnesses in an Intermediate Care Unit are Successfully Supported by a Resuscitator Bag-based Mechanical Ventilator	
10:30 10:45	Networking Break			16:45 17:00		Activities: IEEE Computer Society (Computer)	Paper ID 309 Enhancing Concrete Compression Strength with Potassium Polyacrylate as an Internal Curing Agent	Activities: IEEE Engineering in Medicine and Biology Society (EMBS)
10:45 11:00	Paper ID 128 Peruvian Sign Language (LSP) Translator to Native Quechua Language Using LSTM Neural Networks	Paper ID 269 Differentiation price definition in peer-to-peer local energy markets for loss minimization		17:00 17:15			Paper ID 317 Drawing a "STAR" in my cappuccino with a robotic arm assistant	
11:00 11:15	Paper ID 174 Cybersecurity Maturity Model against ransomware attacks for the financial sector	Paper ID 292 Machine Learning for Safety in Lithium Battery Energy Storage: A State-of-Art Review	Activities: IEEE Robotics and Automation Society (RAS)	17:15 17:30	Paper ID 106 Strategies for Future Education: An Initial Analysis of Learning Platform Mechanics and Interfaces			
11:15 11:30	Paper ID 176 The Security Architecture Based on Blockchain for Peruvian Commercial SMEs	Paper ID 299 Analysis of IEEE and IEC Standards for Calculations of Insulation Levels on an Ecuador 22kV Distribution System		17:30 18:00	Networking Break			
11:30 11:45	Paper ID 190 Distributed edge computing for appearance-based gait recognition	Paper ID 203 Optimal Controller Design Applicable to the Charge of Batteries in Electric Vehicles"			18:00 19:00	Msc. José Ignacio Castillo (México) IEEE R9 Regional Director Elect "Advanced Networks & Special Data Centers"		
11:45 12:00	Paper ID 206 Customer churn prediction in e-commerce base using machine learning and LIME algorithm	Paper ID 320 An Efficiency Comparison of Cost Functions for FCS - MPC in a Three-phase Inverter			19:00 20:00	Andescon Closing Ceremony		
12:00 13:00	Phd. Nicanor Quijano Silva (Colombia) IEEE RAS "Population Games and Evolutionary Dynamics: A New Paradigm in Control" (Main Hall - UNSAAC University Paraninfo)			20:00 21:00	Dinner: Paraninfo UNSAAC			
13:00 15:00	Free time to go out for lunch							



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