WEA 2026 - Special Sessions schedule



Wednesday 21 Oct.	Thursday 22 Oct.	Friday 23 Oct.
	Computational Methods in Finance I Room: 101A-405 9:00-10:30am	**Pannel: Agentic AI in Education** Sala Auxiliar 9:00-10:30am
	Energy and Power Applications I Room: 101A-406 9:00-10:30am	
	Health Applications II Room: 101A-407 9:00-10:30am	
	Applications I - Online Online 9:00-10:30am	
	Coffee Break: 10:30-11:00am	**Coffee Break:** 10:30-11:00am
	Computational Methods in Finance II Room: 101A-405 11:00am-12:30m	**Closing Ceremony** Sala Auxiliar 11:00am-12:00m
	Energy and Power Applications II Room: 101A-406 11:00am-12:30m	
	Applications II - Online Online 11:00am-12:30m	
Lunch: 12:30m-2:00pm		
Optimization Room: 101A-405 2:00-3:30pm		
Artificial Intelligence Foundations Room: 101A-406 2:00-3:30pm		
Miscelaneous I Room: 101A-407 2:00-3:30pm		
Optimization I - Online Online 2:00-3:30pm		
Artificial Intelligence I - Online Online 2:00-3:30pm		
Break: 3:30-4:00pm		
Simulation Room: 101A-405 4:00-5:30pm		
Miscelaneous II Room: 101A-406 4:00-5:30pm		
Health Applications I Room: 101A-407 4:00-5:30pm		
Optimization II - Online Online 4:00-5:30pm		
Artificial Intelligence II - Online Online 4:00-5:30pm		

Wednesday 21 Oct. – 2026, Special Sessions Schedule

Venue: Área Andina Main Campus

Special Session in Optimization – Chair: Prof. José Gerardo Cuta
14:00 -15:30. Room: 101A-405

- ID 15 - Carolina Suárez Roldán, Germán Andrés Méndez. *Optimization Models in the Selection of Economic Activities with a Focus on Sustainable Rural Development*
- ID 56 - Juan Zambrano Alvarez, Gustavo Velasquez Parra, Ricardo Hincapie Isaza. *A MILP Formulation for the Optimal Siting and Sizing of DGs and Operational Dispatch of BESS in Monopolar DC Distribution Networks*
- ID 81 - Alejandro Marquez, Sandra X Carvajal-Quintero, Dahiana López-García. *Optimization of Hosting Capacity in Isolated Areas: A Techno-Economic Analysis of Hybrid Self-Management in Inírida, Colombia*
- ID 121 - Milena Rojas, Eduyn Lopez-Santana. *Aplicación de Análisis Envolvente de Datos para medir la Eficiencia Técnica de Unidades Catastrales en Colombia*
- ID 133 - Juan Camilo Olarte, David Torres, Juan Carlos Figueroa-García, Carlos Franco. *Capacity Planning for Vaccination Centers Under Uncertainty: A Fuzzy Queueing Approach*
- ID 77 - Jaime Restrepo, David Cardona, Angelia Liceth Perez, Andres Arismendi. *Optimization of the Staffing Logistics Process in a Service Company: Integration of Design Thinking and the EOQ Model*

Special Session on Artificial Intelligence Foundations – Chair: Prof. Omar Bustos
14:00 -15:30. Room: 101A-406

- ID 25 - Adalto Farias, Emeldo Brochado. *Interval Fuzzy-Rough Sets for Surface Roughness Classification in Turning Operations*
- ID 28 - David Maldonado, Andres Jutinico. *Physics-Informed Neural Networks for Eigenvalue Problems: Spectral Stability and Training Collapse*
- ID 35 - Cristian Moreno, Cesar Rodríguez-Garavito, Elsa Fonseca, Fernando Guerra, Bernay Cifuentes. *Computer Vision for Coffee Roast Degree Classification at the Individual Bean Level Using a Detector-Classifier Pipeline*
- ID 57 - Juan Martinez, Jhon Diaz, Carlos Gomez. *Robust Inverse Quantum Potential Reconstruction Using Physics-Informed Neural Networks under Noisy Data*
- ID 91 - Jawy Romero, Elvis Gaona. TokenShield: *A Selective Homomorphic Encryption Framework for Privacy-Preserving Token Protection in LLM Inference*

Special Session on Miscellaneous Applications I – Chair: Prof. Claudia Ramirez
14:00 -15:30. Room: 101A-407

- ID 48 - Raul Gutierrez, Angel Alberto Varon, Andrés Alfonso Cardenas Rojas. *Prediction for IPv6 Adoption in South America based on Machine Learning Models*
- ID 54 - Juan Martinez, Carlos Gomez, Jhon Diaz. *Efficient Neural Surrogates for Acoustic Transmission Loss in the SOFAR Channel: MLP, PINN, and SIREN under Geographic Extrapolation*
- ID 94 - Elvis Gaona-García. *QoS Affectation Model for Smart City Telecommunications in Wi-Fi Networks Coexisting with LTE in Unlicensed Band*
- ID 105 - Julian Gutierrez Espinosa, Cesar Rojas. *A GeoAI Framework for Intelligent Property Valuation Integrating Spatial Econometrics, Machine Learning and Urban Sentiment Analysis*
- ID 106 - Juan Pablo Ramírez Rojas. *Caracterización multidimensional de las ZNI de Colombia: Herramientas analíticas para decisiones de electrificación rural*
- ID 139 - Edwin Mauricio Arias López, Diego Alonso Peña. *Salud urbana, bienestar y calidad de vida en el Distrito Calles Vivas: línea base sociourbana del centro de Pereira y su reconfiguración tras el sismo del 10 de agosto de 2026*

Online Session in Optimization I – Chair: Mauricio Morales
14:00 -15:30. Room: https://meet.google.com/xtt-qnoa-jwf

- ID 5 - Gean Mendoza, Angelica Torregroza Espinoza, Jose Figueroa-Contreras, Yenifer Villanueva-Salas. *Supplier Selection in Food Supply Chains: A Structured Multi-Criteria Decision Approach*
- ID 8 - Gean Mendoza, Blanca Paola Hernández-Benítez, Adriana Jaraba-Amaya, Rolando López-Martínez, José Daniel Franco-Avila. *An Integrated Optimization–Simulation Approach for Strategic Agro-Food Supply Chain Design*
- ID 9 - Julian Ramirez, Patricia Cano, Joan Moreno. *Optimization of Multi-Compartment Routing with Flexible Assignment in Fuel Distribution*
- ID 80 - Jeysser Johan Otero-Díaz. *Evaluating Supply Chain Resilience to Minimize Food Waste: A Multi-Agent Simulation of the Mango Network*
- ID 86 - Kenneth Marín Silva, Oscar Gomez, Victor Vélez. *Reactive Power Compensation in Large Distribution Systems: A Genetic Algorithm Integrated into DIgSILENT PowerFactory*

Online Session in Artificial Intelligence I – Chair: Camilo Cardona
14:00 -15:30. Room: https://meet.google.com/szu-dnjj-mqh

- ID 13 - Ricardo Calderón-Pérez, José Rodríguez-Sánchez, Jairo Coronado-Hernández, Alexander Troncoso-Palacio. *Artificial Intelligence Adoption in Colombian SMEs: Barriers, Impacts, and Regional Strategies*
- ID 14 - Julio Rodríguez Rincon. *Artificial Intelligence Applied to Dry Eye Diagnosis*
- ID 18 - Luisa Villa Montoya, Yarlin Andrea Ortiz Toro, Melissa Alejandra Acosta Velez, Christian Andrés Diaz León. *Intelligent Model for Estimating Kinematic and Dynamic Parameters of the Upper Limp*

- ID 23 - Miguel Angel Fernandez Marin, Chavelys Fernández Quintero, Christian David Castellanos Isern, Daniela Fuentes Morales, Daniel Alejandro Alfonso Bermúdez, Reydel Fanjul Evora, Alejandro Cespon Ferriol, Daliana Cabrera Grau, Guillermin Agüero-Chapin, Deborah Galpert Cañizares, María del Camen Chávez Cárdenas. *A Comparative Study of ProtFlash and ProtT5 Embeddings for Antimicrobial Peptide Classification with Explainable AI*
- ID 34 - Christian Erazo, Cristian Gil, Leonel Paredes, Fabian Leon. *Glucometer Readout Extraction from Smartphone Images: Classical OCR vs Multimodal API*
- ID 112 - Nestor Rodriguez, Manuel Ceballos, Diego Canales. *A Three-Axis Taxonomy of Machine Learning Applications in Dengue Epidemiology*

Coffee Break: 15:30 – 16:00

Special Session in Simulation – Chair: Prof. José Gerardo Cuta
16:00 -17:30. Room: 101A-405

- ID 116 - José Orjuela. *Modelo de simulación de eventos discretos basado en datos reales para el procesamiento de muestras diagnósticas en un servicio hospitalario de urgencias*
- ID 117 - Brayant Salgado, Feizar Rueda, Harold Ávila. *Simulating decentralized logistics scenarios in agri-food supply chains: An agent-based modeling approach for regional food systems*
- ID 131 - Mariluz Osorio, German Vargas, Juanita Diaz, Cristitan López, Juan Orozco. *Uso de la simulación de Montecarlo para la evaluación de las rutas de atención a estudiantes de la Facultad de Ingenieria de la Universidad El Bosque - Bogotá, Colombia*
- ID 132 - Ray Bello, Mariluz Osorio, Laura Palencia, Sara Roa. *Simulación de la atención al usuario en un centro de medicina laboral usando FlexSim Healthcare*
- ID 134 - Jhon Castañeda, Eduyn Lopez, Carlos Franco. *Modelamiento del Sector Deportivo Colombiano desde la Dinámica de Sistemas según su Impacto en el Ámbito Social*
- ID 137 - Diana Guzman, Juan Felipe Vargas-González, Charity Juliana Avella, Gabriel Ricardo Ballén-Gamba. *Ciclo Boom-Bust en la Cadena de Suministro de Papa Pastusa Suprema en Colombia*
- ID 76 - David Cardona García, Jaime Restrepo Mesa, Angela Liceth Peréz Rendón, Andrés Arismendi Ramírez . *General Cubing Model for Space Utilization Optimization in Logistics Systems: Validation in a Manufacturing Company*

Special Session in Miscellaneous II – Chair: Prof. Omar Bustos
16:00 -17:30. Room: 101A-406

- ID 24 - René Lobo Quintero, Julio Baron, Sebastian Vanegas. *Leia 2.0: A Configurable AI-Powered Pedagogical Assistant for Reducing Programming Barriers in Engineering Education*
- ID 45 - Yesid Díaz, Magda Fernández. *Automatic Curriculum Alignment Using Sentence Transformers A Natural Language Processing Approach for Higher Education*
- ID 49 - Edgardo Barraza Verdesoto. *Systematic review of complaint management approaches influenced by artificial intelligence*

- ID 63 - Camilo Silva Real, Jose Ignacio Rodriguez, Beatriz Rodriguez. *Knowledge Management Methodology: KPI design and control in low tech organizations using office tools*
- ID 107 - Juan Cogollo, Daniela Alzate. *Modelado de Product Recall Management: tendencias y retos*
- ID 124 - Carolina Sarmiento González. *Interoperabilidad del Ecosistema Educativo Digital: Análisis de la Interoperabilidad Semántica y la Situación de Colombia frente a Referentes Internacionales*

Special Session in Health Applications I – Chair: Prof. Claudia Ramirez
16:00 -17:30. Room: 101A-407

- ID 53 - Andy Dominguez-Monterroza, Alfonso Mateos-Caballero, Antonio Jiménez-Martín. *Ricci Curvature and Topological Descriptors of Heart Rate Dynamics Reveal Developmental Transitions in Early Childhood*
- ID 11 - Derlly Alfonso, Juan Camilo Cuesta, Ana Isabel Tenjo, Juan Sebastian Abril, Cesar Rodriguez. *Macular segmentation using an automatic deep learning and graph cut strategy*
- ID 84 - Raul Gutierrez, Raul Bareño. *Biomechanical Analysis Using Emerging Technologies and AI in Sports: A Data Science-Based Reflection*
- ID 103 - Victor Quintero. *Bio-Computational Architecture and Multimodal AI in Visible Light for Correlating Ocular Phenotypes with Cloninger's TCI Psychobiological Model*
- ID 129 - Edwin Arias López. *Representaciones sociales de la diabetes tipo 2 en mujeres, desde la perspectiva de los determinantes sociales de la salud*

Online Session in Optimization II – Chair: Mauricio Morales
16:00 -17:30. Room: https://meet.google.com/rdg-wqkc-gsv

- ID 6 - Gean Mendoza, Luz Stela Meza Martínez, María José Villadiego Castillo. *Multi-Criteria Supplier Selection for Supply Chain Decision-Making Using TOPSIS*
- ID 7 - Gean Mendoza, Blanca Paola Hernández Benítez, Paula Andrea Vergara Peralta, María Victoria Villadiego García. *Impact of facility layout redesign on operational efficiency in small manufacturing enterprises*
- ID 10 - Jonathan Gallego, José López. *Robust Localization of Animal Vocalizations with Synchronized Recorder Arrays*
- ID 69 - Martín Gómez Navarro, Gustavo Gatica, Rodrigo Linfati, Juan Carlos Figueroa-García, Carlos Alberto Franco Franco, Daniel Morillo-Torres. *GSPH-FC: A Geometric Space Partitioning Heuristic with Frontier Connectivity for the Euclidean TSP*

Online Session in Artificial Intelligence II – Chair: Andres Arismendi
16:00 -17:30. Room: https://meet.google.com/njb-gcco-yrt

- ID 20 - Maria Beatriz Bernábe, Angel Hernandez Francisco, Fernando Perez, Javier Romani. *Gender Wage Gap in Spain: A Multivariate Analysis Based on Education and Age*
- ID 29 - Jairo Powell Gonzalez, Maya Carrillo, Rogelio González, Pedro García. *Fight classification in video clips using image enhancement, pose estimation and Bi-LSTM*

- ID 78 - Jose Barrera-García, Broderick Crawford, José Manuel Gómez Pulido, Felipe Cisternas-Caneo, Yoslandy Lazo, Ricardo Soto, Giovanni Giachetti. *Mamdani Fuzzy Rule Base Design for Adaptive Inertia Weight in Particle Swarm Optimization*
- ID 90 - Julio Cesar De Dios Garcia, Nantai Nava Nolazco, Ernesto Monroy Cruz, Carolina Reta, Jesús Emmanuel Vidal Cuevas, Luis Alberto Cruz Salazar, Juan Sebastián Sánchez-Gómez. *Deep Learning-Based Smart Drone Face Recognition System: A Case Study on Educational Environment*
- ID 109 - Alexander Parody. *Influencia de la Calidad de Vida y la Dinámica Económica sobre la Concentración de PM2.5 a Nivel Continental: Desde la Estadística Multivariada y las Redes Neuronales*
- ID 110 - Alexander Parody. *Concentración de PM2.5 y su Interacción con la Calidad de Vida y el Comportamiento Económico en Países de Suramérica*

Thursday 22 Oct. – 2026, Special Sessions Schedule

Venue: Área Andina Main Campus

Special Session in Computational Methods in Finance I – Chair: Prof. Pedro Pablo Uribe
09:00 -10:30. Room: 101A-405

- ID 43 - Andy Dominguez-Monterroza, Alfonso Mateos-Caballero, Antonio Jiménez-Martín. *Spectral Concentration and Effective Dimensionality in the S&P 500: A Network Perspective on Market Stress*
- ID 50 - Jhon Moreno. *Deep Hedging under Model Uncertainty via Neural Stochastic Differential Equations*
- ID 82 - Fabián Castiblanco, Yuly Andrea Franco. *Determinants of Insolvency in Colombian SMEs: Approach Based on Gradient Boosting Algorithms and Reporting Behavior*

Special Session in Energy and Power Applications I – Chair: Prof. Luis Francisco Lopez
09:00 -10:30. Room: 101A-406

- ID 16 - Fabian Salazar. *Solar Fraction Modeling for Rural Broiler Farms via Synthetic Demand, K-Means Clustering, and Harmonic Approximation*
- ID 27 - Alejandro Marquez, Sandra Carvajal, Dahiana Lopez. Resilient *Optimization Framework for Power Systems: PV Siting via Graph Learning and Probabilistic Stability Validation using MATPOWER*
- ID 39 - Christian Erazo, Diego Guevara, Eduard Mallama. *Percentage-Error Reward and Penalty Design for DDPG-Based Control: Validation in Liquid-Level Regulation and Double Boost Voltage Control*
- ID 65 - Jose Villa, Marcela Arrieta. *Integrated Modeling of Electric Marine Vessel Dynamics, Propulsion, and Battery Systems*
- ID 104 - Francisco Moya, José Alvarez, José L. Torres M. *Iluminación Pública con Tecnologías Convencionales y Fotovoltaicas*

Special Session in Health Applications II – Chair: TBA
09:00 -10:30. Room: 101A-407

- ID 64 - Gabriela Leon. *Analysis of high-frequency electromyographic signals captured with needle electrodes*
- ID 87 - Diego Martinez Florez, Andres Leonardo Jutinico. *Impact of Differential Privacy on Synthetic Data Generation with CTGAN for Heart Failure Risk Prediction*
- ID 100 - NILSON Herazo, Jhonathan Barrios, Bienvenu Bongue. *Machine Learning-Based Chronic Disease Risk Models for Health Prevention Programs*
- ID 101 - Valentina Holguin, Estefania Perez, Juan Pablo Restrepo. *Análisis de descriptores de sEMG y su relación con el puntaje EAT-10 en pacientes con disfagia*

Online Session in Applications I – Chair: Carlos Valencia
09:00 -10:30. Room: https://meet.google.com/igz-gzpn-xmt

- ID 32 - Daniel Aragon, Carlos Zapata, Oscar Reyes. *Regime-Robust Sparse Index Tracking via Multi-Objective Genetic Optimization with Hurst Exponent Regularization*
- ID 26 - Oscar Acevedo, Yamil Ballestas, Javier Carrillo, Camila Lozano, Nicolas Molina, Santiago Bertel, Aisner Marrugo, Raul Vargas. *An Intelligent Neonatal Incubator Prototype for Active Control and Remote Monitoring*
- ID 41 - Santiago Romero Solana. *Machine Learning-Based IoT Infrastructure for Energy Systems: Signal Smoothing Optimization in High-Noise Environments*
- ID 68 - Diego Castrillon Diaz. *Automated Photovoltaic Irrigation System for Crops in the Colombian Caribbean Region*
- ID 73 - Edgar Tibaduiza, Walter Villa, Jesus Lopez. *A Discrete to Continuous Strategy for AC Optimal Reactive Power Dispatch Using Pyomo and IPOPT*

Coffee Break: 10:30 – 11:00

Special Session in Computational Methods in Finance II – Chair: Prof. Pedro Pablo Uribe
11:00 -12:30. Room: 101A-405

- ID 22 - Carlos Zapata Quimbayo, Daniel Aragon Urrego, Oscar Eduardo Reyes Nieto. *PhysRisk-ADMM: A Scalable Consensus Architecture for Dynamic Physical Climate Risk Integration in Portfolio Optimization*
- ID 60 - Andres Suarez Mantilla, Diego León, Ricardo Delgadillo. *Black–Litterman for Fixed-Income Engineering Applications: A Structured Survey of Machine Learning, Deep Learning, and Dynamic Probabilistic Extensions*
- ID 138 - Oscar Javier López Alfonso. *Finite-Time Ruin in the Jump-Telegraph Risk Model: Exact Simulation and Transform Inversion*

Special Session in Energy and Power Applications II – Chair: Prof. Luis Francisco Lopez
11:00 -12:30. Room: 101A-406

- ID 17 - Maximiliano Bueno, Carlos Vidal, Jose-Fabian Salazar. *Demand Management Model for a Microgrid within an Open Market Framework*
- ID 21 - Harrynson Ramirez Murillo, Duvan Tellez Castro, Carlos Andrés Torres Pinzón. *Static and Dynamic Data-Driven Modeling of Colombian Average Redispatch Marginal Cost*
- ID 31 - Daniel Arias, Jorge Duque, Jose Villa. *Design and Implementation of a Two-Coupled Tank Control System*
- ID 51 - Luis Alejandro Arias. *UML-Based Modeling of a Management System for Distribution Network Sectioning under Blackouts and Sudden Supply Interruptions*
- ID 123 - Vladimir Silva Leal, Diego J. Rodríguez Patarroyo, Edwin A. García Chavarría, Frank A. Ruiz Holguín, John R. Agudelo Santamaría. *Marco metodológico de inteligencia computacional basado en el algoritmo LAMDA para la clasificación multivariante de variables de desempeño y emisiones en la microturbina GTM-300 alimentada con biojet HEFA-SPK*

Online Session in Applications II – Chair: Carlos Valencia
11:00 -12:30. Room: https://meet.google.com/gfw-hwpw-zyx

- ID 2 - Gean Mendoza, Angelica Torregroza, Cristina Isabel Beltrán Sotomayor, Jhon Jairo Gonzalez Yerena, Rolando López Martínez. *Improving Production Flow in a Manufacturing System Through Discrete Event Simulation*
- ID 3 - Juan Contreras, Isabella Ceballos, Juan Jose Restrepo, Maria Constanza Pabon. *Enhancing Manufacturing Systems: Evaluating Graph Databases for Process Control and Information Management*
- ID 75 - Roger Mauricio Pérez Cruz. *Dinámica de Sistemas y Ciencia de Redes aplicadas al estudio de la corrupción pública: un análisis bibliométrico*
- ID 88 - Roger Mauricio Pérez Cruz. *Methodological Fragmentation in Public Corruption Re-search: Between Network Science and System Dynamics*
- ID 115 - Igor Pedro, Graziela Guarda, Maise Silva. *FlowMap: a web platform using graphs and CPM to support academic planning*