

SmartTech-IC 2024
Fourth International Conference on Smart Technologies, Systems and Applications
Quito - Ecuador
Conference Final Program

Monday, December 02	
08:00 - 09:00	Registration
09:00 - 10:00	Conference Opening: Aula Magna
10:00 - 11:00	Keynote: Prof. Pablo Paredes, Ph.D Aula Magna
11:00 - 11:30	Coffee Break
	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">Session I: Smart Systems (Auditorium: Candido Rada)</p> </div> <div style="width: 48%;"> <p style="text-align: center;">Session II: Smart Technologies (Auditorium: Oscar Romero)</p> </div> </div>
11:30 - 11:50	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 11: "An intelligent mobile navigation system for visually impaired people using computer vision and deep learning for multi-label classification in park environments" Remigio Hurtado and Christian Delgado</p> </div> <div style="width: 48%;"> <p>ID 5: "ChatBanker: A chatbot for efficient management of bank documents" Jorge Cordero, Edgar Martínez, Jandri Villavicencio and Luis Rodrigo Barba Guamán</p> </div> </div>
11:50 - 12:10	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 21: "Detection of DDoS Attacks in Computer Networks Using Deep Learning" Jimmy Calle, Rodolfo Bojorque, Andrea Plaza and Pilar Morquecho</p> </div> <div style="width: 48%;"> <p>ID 9: "Smart Irrigation Technology, ensuring water availability: automated approach for greenhouse water management" Paola Paola Duque-Sarango, Kevin Robles and Sebastian Cédillo</p> </div> </div>
12:10 - 12:30	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 28: "Detection of Automatically Generated Texts: A Classification-Based Approach and Text Features". César Espin-Riofrio, Joel Alejandro Barba-Salazar, Edison Cruz-Navarrete, Mariuxi Del Carmen Toapanta Bernabé, Oswaldo Vergara-Bello, Pamela Carriel-Castillo, Irving Garzón-Soledispa and Arturo Montejo-Ráez</p> </div> <div style="width: 48%;"> <p>ID 35: "Leveraging Web Scraping to Identify Opportunities for Young Talent to UK Digital Manufacturing" Priyesh Dhole, Imtiaz Hussain Khan, Imtiaz Ali Khan and Karl Warner</p> </div> </div>
12:30 - 14:00	Luch
14:00 - 15:00	Keynote: Prof. Teodiano Freire, Ph.D Aula Magna
	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">Session III: Smart Trend & Applications (Auditorium: Candido Rada)</p> </div> <div style="width: 48%;"> <p style="text-align: center;">Session IV: Smart Health (Auditorium: Oscar Romero)</p> </div> </div>
15:00 - 15:20	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 145: "A Unified Multi-Platform IoT Architecture Leveraging gRPC for Seamless Integration of LoRaWAN, MQTT, and HTTP Protocols" Erwin J. Sacoto-Cabrera, Gabriel Chuchuca, Malki Yupanki, Javier Martínez and Jefferson Reyes</p> </div> <div style="width: 48%;"> <p>ID 63: "Enhanced Breast Cancer Detection Using Filter-Augmented DenseNet169: Outperforming Traditional CNN Models with Few-er Epochs" Anahí Vaca Fiallos, Paula Pozo Corral, Sisa Lluilema Lluilema, Diego Almeida-Galárraga, Andrés Tirado-Espín, Kevin Landázuri, Lenin Ramírez-Cando, Fernando Villalba-Meneses and Carolina Cadena-Morejón</p> </div> </div>
15:20 - 15:40	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 73: "Analysis of the production process in the tanning industry based on simulation methods" Jorge Morales, John Reyes, Renato Reyes, Rosa Chango, Jean Pierre Martínez, Diego Constante and Jomayra Molina</p> </div> <div style="width: 48%;"> <p>ID 149: "Mobile Application for an Integrated Portable Medical Assistant" Leonardo Israel Ormaza Siguenza, Ana Cecilia Villa Parra and Teodiano Freire Bastos</p> </div> </div>
15:40 - 16:00	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 7: "Numerical Analysis by CFD of the Boiling Process and the Behavior of Aluminum Oxide Nanoparticles in Refrigerants R600a and R290" Jaime Salinas, Fernando Toapanta-Ramos and William Diaz</p> </div> <div style="width: 48%;"> <p>ID 56: "Parkinson's Disease Detection Using Improved AlexNet Convolutional Neural Network" Ariel Miranda, Camila Usama, Kevin Samaniego, Ricardo Moreira, Fernando Villalba, Paulo Navas, Andrés Tirado-Espín, Carolina Cadena, Diego Almeida-Galárraga and Paulina Vizcaíno-Imacaña</p> </div> </div>
16:00 - 16:30	Coffee Break
16:30 - 16:50	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 36: "Analysis of data gaps in multiparametric dataset for seismic and volcanic monitoring networks" Santiago Arrais and Luis Urquiza</p> </div> <div style="width: 48%;"> <p>ID 135: "Rapid and Accurate Detection of Heart Failure: Integration of Echocardiograms and Clinical Data through neural networks." Victor Manuel Arrobo Sarango, Jeremy Fabrizio Carlosama Quinatoa, Diego Almeida-Galárraga, Andrés Tirado-Espín, Kevin Landázuri-Cortez, Lenin Ramírez-Cando, Fernando Villalba-Meneses and Carolina Cadena-Morejón</p> </div> </div>
16:50 - 17:10	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 78: "Analysis of physical and chemical indicators in the community of San Pablo Urco-Cantón Cayambe to evaluate the state of soil degradation in high mountain grasslands" Freddy Vicente Cuarán Sarzosa, Alejandra Monserrath Cuacés Morocho, Katherine Fernanda Molina Molina and Diana Elizabeth García Tumipamba</p> </div> <div style="width: 48%;"> <p>ID 148: "Automatic Detection of Architectural Distortion in Digital Breast Tomosynthesis using Real-Time Object Detection Models" Christopher Huitca and Fabián Narváez</p> </div> </div>
17:10 - 17:30	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ID 151: "Analysis of Stabilization Control in a Hexapod Robot: An Approach Utilizing MPU6050 and Kalman Filtering" Dennys Baez, Julio Montesdeoca, Cisne Ortega, Luis Serpa, Walter Orozco and Juan Marcos Toibero</p> </div> <div style="width: 48%;"> <p>ID 62: "Comparison of Machine Learning and Dimensionality Reduction Algorithms in the Classification of Myoelectric Hand Gestures for Prosthetic Control" Brad Joffre Timana Flores, Henry David Velasco Rojano, Diego Almeida-Galárraga, Andrés Tirado-Espín, Carolina Cadena-Morejón, Kevin Landázuri-Cortez, Lenin Ramírez-Cando and Fernando Villalba-Meneses</p> </div> </div>

Tuesday, December 03		
08:30 - 09:00	Registration	
09:00 - 10:00	Keynote: Prof. Alberto López, Ph.D Aula Magna	
	Session V: e-Learning and Informatics (Auditorium: Candido Rada)	Session VI: Smart Health (Auditorium: Oscar Romero)
10:00 - 10:20	ID 129: "Evaluating Word Embedding Models in Ecuadorian Legal Texts: A Comparison of CBOW and Skip-gram for Semantic Analysis" Christian Salamea and Wilfredo Martel	ID 18: "Use of Virtual Reality and Mixed Reality for Learning Abdominal Biology" Karin Correa, Luis Navia, Johnnanthan Velez, Andrés Vivas and Jairo Alfonso Vásquez-López
10:20 - 10:40	ID 6: "Implementation of Educational Resources Adapted to the VARK Learning Styles of Students in Higher Education" Jorge Cordero and Germanía Rodríguez Morales	ID 23: "A Comprehensive Approach to Blood Glucose Prediction: A Multi-Branch Network" Jose Yáñez, Luis Zhinin-Vera and Fernando Gonzales
10:40 - 11:00	ID 66: "Digital Ecosystems in University Institutions: a systematic mapping of literature" Gonzalo Guamo Escaleras, Germanía Rodríguez-Morales and Samanta Cueva Carrión	ID 51: "Latent Semantic Analysis for statistical analysis of cancer distribution" Gabriel Slomovitz
11:00 - 11:30	Coffe Break	
11:30 - 11:50	ID 103: "Exams as a Service: Synergies between ChatGPT, and Cloud Computing for Education" Gustavo Navas, Julio Ricardo Proaño Orellana, Rogelio Orizondo and Alex Terreros	ID 97: "Attention based Tri-decoder Framework for Segmentation and Classification of Nuclei in Bladder Histology" Sadia Jabbar Anwar, Ibtihaj Ahmad, Umar Saleem, Saleem Riaz and Ying Li
11:50 - 12:10	ID 110: "Characterization of the graduation profile of the Software and Telematics programs from UTEQ: Analyzing Educational Outcomes with Industry Demands." Cristian Zambrano-Vega, María Isabel Chévez, Emilio Zhuma, Oscar Moncayo, Byron Oviedo and Aldo Valadez Dorado	ID 144: "A Comparative Analysis of Super-resolution approaches based on Generative Adversarial Networks for Lung Nodules Detection" Leonardo Pinango and Fabián Narváez
12:10 - 12:30	ID 136: "Stimulation of spatial reasoning in children aged 6 to 7 using assistive technology, computer vision, and elements of Inca and Cañari cultures" Christian Japón-Chavez, Vladimir Robles-Bykbaev, Ana Parra-Astudillo, Efrén Leandro Lema Condo, Dayanna Sánchez-Noboa and Yaroslava Robles-Bykbaev	ID 147: "Evaluation of data enhancement strategies for contrast-enhanced mammography synthesis" Cristian Restrepo, Kevin Osorno and Gloria Diaz
12:30 - 14:00	Luch	
14:00 - 15:00	Keynote: Prof. Mario Aguilar Aula Magna	
	Session VII: Smart Systems (Auditorium: Candido Rada)	Session VIII: Smart Trend & Applications (Auditorium: Oscar Romero)
15:00 - 15:20	ID 102: "Application of large language models to solving differential equations: constructing baseline models with LSTM and GRU" Anton Surkov, Vladimir Zakharov, Sergei Koltcov and Vera Ignatenko	ID 32: "Application of Machine Learning Algorithms to Detect Fake News in the Peruvian Context" Diego Yoshiro Dongo Esquivel, Efraina Gladys Cutipa Arapa and Rony Villafuerte Serna
15:20 - 15:40	ID 128: "Polyglot Persistence in Heterogeneous NoSQL Database Systems with Python" Diana Martinez-Mosquera, Rosa Navarrete, Lorena Recalde and Andres Andrade-Cabrera	ID 24: "Optimizing Hydroponic Lettuce Cultivation: Design, Performance Evaluation, and Sustainability in Household Greenhouses" Fernando Lozano, Marcelo Moya and Guillermo Mosquera
15:40 - 16:00	ID 137: "Exploring New Horizons on the Interpretation of PCA using LLM for Data Analysis" Victor Saquicela, Kenneth Samuel Palacio-Baus, Mercy Orellana and Mauricio Espinoza	ID 54: "Computational Study of Nanotechnological Coatings to Minimize Corrosion in Galvanized Steel Elements of the Electrical Distribution Grid" Julio Guerra, Jorge Lechón, Alejandro Palacios, Andrés Martínez, Eliana Ormeño-Mejía and Jhonny Barzola
16:00 - 16:30	Coffe Break	
16:30 - 16:50	ID 13: "Anomaly Detection in Industrial Systems: Classical vs. Deep Learning Approaches with OPC-UA integration" Henry Velesaca Lara, Domenica Carrasco, Angel Sappa, Juan A. Holgado-Terriza and Wilton Agila	ID 74: "Predictive Model of TikTok Virality in the 2023 Ecuador Runoff Election" Kenneth Danilo Cayo Tabango and Lucia Bernarda Rivadeneira Barreiro
16:50 - 17:10	ID 100: "Consolidation of Biomimicry and Swarm-based Evolutional Algorithms with Supervised Learning Neural Network for Function Approximation" Ck Wang	ID 15: "Drone Detection and Antidrone System Using YOLO: An Effective Approach to Airspace" Jaime Astudillo, Roberth Chachalo, Cristian Iza and Luis Zhinin-Vera
17:10 - 17:30	ID 161: "Detecting Fake News and Fact-Checking in Tweets Using Spanish Language Models: A Case Study with Ecuador Chequea and Ecuador Verifica" Mariuxi Toapanta, Miguel Angel Garcia Cumbreiras and L. Alfonso Urefia-López	ID 90: "Creating a Botnet in a Virtual Environment: A Study Based on the Mirai Code" Luis Anderson Coronel Rojas, Fabian Ranulfo Cuesta Quintero, Yesenia Areniz and Dewar Rico-Bautista
17:30 - 18:30	Cultural Event "Noche Quiteña"	

Wednesday, December 04	
08:30 - 09:00	Registration
09:00 - 10:00	Keynote: Prof. Rafael Parra, Ph.D Aula Magna
	Session IX: Smart Trend and Applications (Auditorium: Candido Rada) Session X: Smart Trend and Applications (Auditorium: Oscar Romero)
10:20 - 10:40	ID 96: "Development of a Signal Acquisition and Processing System to Determine the Operating Characteristic Curve of Domestic Refrigerators Axial Fans" Esteban Ordóñez, Nelson Jara, Fran Reinoso and Juan Cevallos ID 71: "Community-Based Adaptation to Climate Change in Ventanas Subtropical Zone: Validating Climate Projections with In-Situ Data" Mariana Luna Cadena, Kevin Pacheco Proaño and Sheila Serrano Vincenti
10:40 - 11:00	ID 125: "Developing an IoT System with LoRa and a Web Platform for Enhanced Early Detection of Forest Fires" J.D. Armijos, C. Guerrero, Juan Pablo Bermeo and Luis Fernando Guerrero ID 150: "Improvement of the warehouse storage system of a biotechnology products importing company through the application of Lean Manufacturing." Doris Jácome, William Quitiaquez, Erika Pilataxi and Cristian Leiva
11:00 - 11:30	Coffe Break
11:30 - 11:50	ID 109: "Enhancing Cellular Line Representation with Transformer-Based Text Embeddings for Precision Drug Repositioning" Ivan Carrera, Jefferson Criollo and Inês Dutra ID 44: "Design and Implementation of an Augmented Reality System for the EPN Museum" Julio Pérez, Carlos Gallardo, Marcelo Pozo and Erika Cachago
11:50 - 12:10	ID 99: "Annotation method for tweets in Spanish about corruption in Peru" Daniel Contreras Ruiz, Johann Idrogo Diaz, Carlos Canepa Perez and Yudi Guzmán Monteza ID 25: "Software tool for control and manipulation of a real Puma robot" Hernan Trullo, Oscar Vivas and Juan Villa
12:10 - 12:30	ID 126: "Building a Traffic Database for Vehicle Detection: A YOLO-NAS-Based Approach" Miguel Flores, Luis Lapo, Ramiro Torres, Ramon Mollineda and Erik Maila ID 101: "Digital Twin for a Semiautomatic Carbonated Water Packaging Machine" Martín Puente, Marcelo Moya, Guillermo Mosquera, Faruk Abedrabbo and Kleber Castro
12:30 - 14:00	Luch
	Electronic Posters Sessions
14:20 - 14:30	ID 27: "Human or Machine?" Analyzing the Ability to Detect Artificially Generated Text César Espin-Riofrio, Ángela Yanza - Montalván, Angélica Cruz-Chóez, Johanna Ivonne Galarza Alay, Maylee Ordoñez-Valencia, José Luis Alonso Anguizaca and Arturo Montejo-Ráez ID 42: "Analysis of Hidden Patterns in Road Accident Dataset using Clustering Techniques" Henry Velasaca Lara, Miguel Realpe, Anget Sappa and Alice Gómez
14:30 - 14:40	ID 49: "Integrating E-Learning with CAD/CAM to Enhance CNC Education in Design and Manufacturing" Isaac Simbaña and William Quitiaquez ID 58: "Skin Cancer Detection through Skin Mole Analysis with MATLAB - retrained AlexNet Convolutional Neuronal Network" Anthony Anrango Méndez, Dayana Murillo, Isaac Arias Serrano, Fernando Villalba, Andrés Tirado-Espín, Carolina Cadena, Paulina Vizcaíno, Diego Almeida and Kevin R. Landázuri.
14:40 - 14:50	ID 69: "Calculation of the carbon footprint of the Universidad de las Fuerzas Armadas ESPE with the support of IoT devices." David Carrera, Javier Alexander Asimbaya Dávila, Camila Nicole Caerón Rivera, Camila Nicole Cerón Rivera, Mary Emilia Nicolalde Hinojosa, Luis Alberto Pillajo Medina and Gabriel Andrés Urbano Caicedo ID 81: "Evaluation of water quality through physicochemical analysis and the use of aquatic macroinvertebrates in a section of the Chimbo River" Luis David Gaibor Chacha, Edwin Fabián Bersosa Vaca, Mariana Liceth Luna Cadena, Diana Elizabeth García Tumipamba and Christian Fabricio Aroca Chimbolema
14:50 - 15:00	ID 138: "Innovation, Digitalization and E-Governance in the E-commerce of Ecuadorian companies" Darwin Orsoñez-Iturralde, Christian Proaño-Piedra, Aura Guerrero-Luzuariaga Segundo F Vilema and Cynthia L. Román-Bermeo ID 142: "Generation of secure passwords through microlearning applications" María Belesaca, Wiliam Quitiaquez, Miguel Arcos and Patricio Quitiaquez
	Session XI: Smart Systems (Auditorium: Candido Rada) Session XII: Smart Health (Auditorium: Oscar Romero)
15:00 - 15:20	ID 108: "Developing a LoRaWAN-based Data Acquisition Device Empowered by AI" Menno Faber, Jair Silva, Helder Rocha and Marcelo Segato ID 55: "Enhancing Rehabilitation with EMG-Driven Hand Gesture Recognition Using SVM, KNN, and MLP" Francis Andaluz, Gabriela Cevallos, Milena Salvador, Paulo Navas, Andrés Tirado-Espín, Fernando Villalba, Carolina Cadena, Diego Almeida and Paulina Vizcaíno-Imacaña
15:20 - 15:40	ID 140: "A Low Power Non-Invasive Wrist-Based Approach for Glucose Monitoring" Luz M. Tobar-Subia-Contento, Raúl Vargas, Lenny Alexandra Romero and Sonia H. Contreras-Ortiz ID 120: "A Prototype for Sedentary Posture Monitoring Using a Chair and Headband Sensor System" Rebeca Daza, Pablo Cevallos and Diana Arce
15:40 - 16:00	ID 155: "Literature Reviews with AI: Leveraging Research Rabbit and BERT-Based Models for Efficient Retrieval and Topic Clustering" Andres Andrade-Cabrera, Carlos Ayala-Tipan, Gabriela Suntaxi and Lorena Recalde ID 117: "Medical Waste Data Analysis in Ecuador using Sparse HJ-Biplot and Clustering Techniques" Mayra Tualombo, Isidro Amaro and Zenaida Castillo
16:00 - 16:30	Coffee Break
16:30 - 16:50	ID 47: "Implementation of IoT flowmeters and water leak detection at the ESPE Armed Forces University in test blocks" David Vinicio Carrera-Villacrés, Patricio Xavier Guaján-Pozo, Shyrley Nicole Mora-Paz, Karen Mishell Silva-Quitumbango and Carlos Anibal Vega-Mayorga ID 64: "Control Design and Validation of Gait Analysis with the Robogait Mobile Robotic Platform" Diego Guffanti, Alberto Brunete, Miguel Hernando Gutierrez, David Álvarez and Nelson Gutiérrez
16:50 - 17:10	ID 168: "Virtual Reference Feedback Tuning: An Alternative for Microalgae Culture Control" Claudia Garzón ID 19: "AI-Based Classification of S3 Heart Sounds Using a Digital Stethoscope for Early Heart Condition Detection" Audrey Cholango, Byron Zapata, Carmen Celi and Sivana Zapata
	Conference Closing: Cultural Event