

## Second International Conference on Smart Technologies, Systems and Applications

December 01-03, 2021

Quito, Ecuador

### Program

Dec 01st  
Wednesday

09:30  
10:00  
GTM-5

Opening Ceremony  
AUDITORIUM

AULA MAGNA

10:00  
11:00  
GTM-5

Keynote: "Analyzing cellular organization patterns for cancer's pronostic"

Germán Corredor, Ph.D

Case Western Reserve University (USA)

AULA MAGNA

C O F F E B R E A K

11:30  
12:30  
GTM-5

Keynote: "Serverless computing: What's in a name"

Germán Moltó, Ph.D

Universitat Politècnica de València (UPV) (Spain)

AULA MAGNA

L U N C H

Session I: Smart Systems  
Chair: Fabián Narváez

14:00  
14:20  
GTM-5

- Land cover classification using CNN and semantic segmentation  
Authors: Juan Carlos González Vélez, María C. Torres Madronero and Juan Martínez (Colombia)

14:20  
14:40  
GTM-5

- Data Mining Applied to a Serious Game of Memory and Attention Training  
Authors: Marcos Orellana, Juan Fernando Lima, María Inés Acosta Urigüen, Andrés Patino, Nicolás Álvarez and Juan Cordero (Ecuador)

14:40  
15:00  
GTM-5

- Recommender System for Physical Activities Based on Level of Air Pollutants and Meteorological Variables  
Authors: Juan Calle, Emilio Guzmán, Juan Fernando Lima, Andrés Patino, Marcos Orellana and Priscila Cedillo (Ecuador)

AULA MAGNA

Session II: Smart Health  
Chair: Tatiana Mosquera

- A Machine Learning Approach for Blood Glucose Level Prediction  
Authors: Luis Zhinin Vera, Nayeli Gómez Castillo, Fernando Gonzáles Zubiarte, Gabriela Pineda, Diana León, Pedro Cajilima, Andrés Hidalgo and Lady Maldonado (Ecuador)

- Computational Analysis of the Toxicity of Particulate Matter in the Respiratory Tract of Children  
Authors: Gustavo Suárez Guerrero, José Daniel Hoyos Giraldo, Camilo Andrés Paramo Velásquez, Mateo Echeverri Peláez, Wuitman Garrafa Jara and Juliana Andrea Niño Navia (Colombia)

- Epidemic models and estimation of the spread of SARS-CoV-2: case study Portoviejo - Ecuador  
Authors: Luis Sánchez and Saba Infante (Ecuador)

SALA DE USO  
MÚLTIPLE 1

15:00  
17:00  
GTM-5

Tutorial: "Virtual Microscopy"

Germán Corredor, Ph.D

Case Western Reserve University (USA)

AULA MAGNA

## Second International Conference on Smart Technologies, Systems and Applications

Quito, Ecuador

Dec 02nd  
Thursday

09:00  
10:00  
GTM-5

Department of Information Systems in the CUCEA Campus (Mexico)  
Victor Manuel Larios, Ph.D

AULA MAGNA

10:00  
11:00  
GTM-5

Keynote: "Assistive technologies for children and elderly people"  
Teodiano Freire Bastos, Ph.D  
Federal University of Espirito Santo (Brazil)

AULA MAGNA

C O F F E B R E A K

Session III: Smart Trends  
Chair: Esteban Inga

Session IV: Smart Systems  
Chair: Leony Ortiz

11:30  
11:50  
GTM-5

- Smart walker based on artificial vision for the autonomous movement of seniors with mobility problems and reduced vision  
Authors: José Guamushig Laica, Miguel Jerez Gavilánez, Darío Mendoza Chipantasi and Jessica Marino (Ecuador)

- Hand Gesture Recognition using Leap Motion Controller, Infrared Information and Deep Learning Framework  
Authors: Bryan Toalumbo Rodriguez and Rubén Nogales (Ecuador)

11:50  
12:10  
GTM-5

- Lightweight Convolutional Neural Networks Framework for Really Small TinyML Device  
Authors: César Estrebou, Martín Fleming, Marcos David Saavedra, Federico Adra and Armando Eduardo De Giusti (Argentina)

- A Novel Technique for Forest Height Estimation From SAR Radar Images Using the Omega K Algorithm  
Authors: Jhohan Jancco Chara, Facundo Palomino-Quispe, Roger Coaquira-Castillo and Mark Donny Clemente Arenas (Perú)

12:10  
12:30  
GTM-5

- Integrating medical information software using Health Level Seven and FHIR  
Authors: Kevin Maxi and Villie Morocho (Ecuador)

- A New Handwritten Number Recognition Approach Using Typical Testors, Genetic Algorithms and Neural Networks  
Authors: Eddy Torres Constante, Julio Ibarra Fiallo and Monserrate Intriago Pazmiño (Ecuador)

AULA MAGNA

SALA DE USO  
MÚLTIPLE 1

L U N C H

Session V: Smart Application  
Chair: Diego Vallejo

Session VI: Smart Health II  
Chair: Julio Proaño

14:00  
14:20  
GTM-5

- End-to-End Compressive Spectral Classification: A Deep Learning Approach Applied to the Grading of Tahiti Lime  
Authors: Mauricio Silva Maldonado, Laura Galvis Carreno and Henry Arguello (Colombia)

- Brain Tumor Segmentation Based on 2D U-Net Using MRI Multi-Modalities Brain Images  
Authors: Daniela Tene, Diego Almeida Galárraga, Graciela Salum, Gandhi Villalba, Omar Alvarado Cando, Carolina Cadena Morejón and Andrés Tirado Espin (Ecuador)

14:20  
14:40  
GTM-5

- Software to assist visually impaired people during the Craps Game using machine learning on Python platform  
Authors: Nicolás Hernández Díaz, Yersica C. Peñalzo, Y. Yuliana Rios and Luz A. Magre Colorado (Colombia)

- Neurorehabilitation assistant for upper extremities using low frequency EEG signals for spinal cord injury, employing a convolutional neural network model  
Authors: Alejandro Delgado, Lady González, Mario Gualsaqui, Giovana Vaca, Diego Almeida Galárraga, Graciela Salum, Carolina Cadena-Morejón, Andrés Tirado Espin and Fernando Villalba Meneses (Ecuador)

14:40  
15:00  
GTM-5

- Software architecture design for air pollution modeling  
Authors: Félix Melchor Santos López, Edgar Luis Cáceres Angulo, Jhon Manuel Portella Delgado and Eulogio Guillermo Santos De La Cruz (Perú)

- Generation of synthetic response to the application of contrast mediums in medical images to improve the automatic diagnosis of breast cancer  
Authors: Jaider Stiven Rincón Gallego, Gloria Mercedes Díaz Cabrera, Carlos Andres Mera Banguero and Rubén Darío Fonnegra Tarazona (Colombia)

AULA MAGNA

SALA DE USO  
MÚLTIPLE 1

15:00  
17:00  
GTM-5

Tutorial: "Remote sensing using image processing"  
María C. Torres Madroñero, Ph.D  
Instituto Tecnológico Metropolitano (Colombia)

AULA MAGNA

Dec 03rd  
Friday

09:00  
10:00  
GTM-5

Keynote: "Remote sensing for agricultural precision"  
María C. Torres Madronero, Ph.D  
Instituto Tecnológico Metropolitano (Colombia)

AULA MAGNA

10:00  
11:00  
GTM-5

Universidad Nacional de Colombia (Colombia)  
Jairo E. Espinosa , Ph.D

AULA MAGNA

C O F F E B R E A K

Session VII: Smart Applications  
Chair: Diego Vallejo

11:30  
11:50  
GTM-5

- Automatic Recognition of Pictograms with Convolutional Neural Network Approach for Literacy  
Authors: Diego Vallejo Huang and Ayleen Reyes (Ecuador)

11:50  
12:10  
GTM-5

- Mobile application of registry information for urban planning context with Augmented Reality and QR codes  
Authors: María Mora Alvarado and Joe Llerena Izquierdo (Ecuador)

12:10  
12:30  
GTM-5

- Automatic social distance detection system  
Authors: Darwin Merizalde and Paulina Morillo. (Ecuador)

AULA MAGNA

Session VIII: Smart Health  
Chair: Paulina Morillo

- Diabetic retinopathy: detection and classification using AlexNet, GoogleNet and ResNet50 convolutional neural networks  
Authors: Jhonny Caicho, Cristina Chuya, Nicole Jara, Graciela Salum, Andrés Tirado Espin, Gandhi Villalba, Omar Alvarado Cando and Diego Almeida Galárraga (Ecuador)

- Automatic Identification of COVID-19 in chest X-Ray Images Based on Deep Features and Machine Learning Models  
Authors: Rubén D. Fonnegra, Fabián R. Narváez and Gloria M. Díaz (Colombia)

- COVID-19 pulmonary lesion classification using CNN software in chest X-ray with quadrant scoring severity parameters  
Authors: Denisse Niles, Daniel Amaguaña, Alejandro Lojan, Graciela Salum, Gandhi Villalba, Omar Alvarado Cando, Andrés Tirado Espin and Diego Almeida Galárraga (Ecuador)

SALA DE USO  
MÚLTIPLE 1

L U N C H

Session IX: Smart Trends  
Chair: Milton Ruiz

14:00  
14:20  
GTM-5

- Design, Implementation, and Modeling of a LoRa Network Installed in a Freshwater Body  
Authors: Mateo Guerra, Gustavo Adolfo Urrea, Juan Sebastián Botero and Erick Estefen Reyes (Colombia)

14:20  
14:40  
GTM-5

- HJ-Biplot and Cluster Analysis to evaluate the COVID-19 vaccination process of American and European countries  
Authors: Lenin Riera Segura, Guido Tapia Riera, Isidro R. Amaro, Saba Infante and Harvey Marín Calispa (Ecuador)

14:40  
15:00  
GTM-5

- A novel algorithm for a fast and greatly accurate Electrical Fault detection and classification based on current and voltage characteristics extraction  
Authors: Milton Ruiz, Manuel Jaramillo and Silvio Simani (Ecuador)

AULA MAGNA

Session X: Smart Application  
Chair: Julio Proaño

- Weather Images Classification using Self-Supervised Learning  
Authors: Diego Acuña Escobar, Monserrate Intriago Pazmino and Julio César Ibarra Fiallo (Ecuador)

- Pose conditioned human motion generation using GAN  
Authors: Luis Andrés Aguilar Luhrs, Saúl Tovar Arriaga, Jesús Carlos Pedraza Ortega and Andrés Takács (Mexico)

- An approach to estimate the orientation and movement trend of a person in the vicinity of an industrial robot  
Authors: Mauricio Arias, Carlos Sánchez and Vanessa Morales (Colombia)

SALA DE USO  
MÚLTIPLE 1

15:00  
17:30  
GTM-5

Electronic Poster 1- 10

SALA DE USO  
MÚLTIPLE 1

17:30  
18:00  
GTM-5

Closing Event

AULA MAGNA