13th Mexican Conference on Pattern Recognition MCPR2021

June 23–25, 2021, CDMX, Mexico

Virtual conference due to the COVID-19 pandemic

PROGRAM

Wednesday June 23 (Mexican Time UTC-5)	
9:00-9:20	Opening
	Session 1: Artificial Intelligence Techniques and Recognition
9:20-9:40	A Straightforward Framework for Video Retrieval Using CLIP Jesús Andrés Portillo-Quintero, José Carlos Ortiz-Bayliss, and Hugo Terashima-Marín
9:40-10:00	Inferential Rules for Identifying Answers in TOEFL Texts Meliza Contreras González, Mireya Tovar Vidal, and Guillermo De Ita Luna
10:00-10:20	Automatic Detection of Injection Attacks by Machine Learning in NoSQL Databases Heber I. Mejia-Cabrera, Daniel Paico-Chileno, Jhon H. Valdera-Contreras, Victor A. Tuesta-Monteza, and Manuel G. Forero
10:20-10:40	Automatic Recognition of Learning-Centered Emotions Yesenia N. González-Meneses, Josefina Guerrero-García, Carlos Alberto Reyes-García, and Ramón Zatarain-Cabada
10:40-11:00	**Break**
11:00-12:00	Keynote Address **Biases in Machine Learning and Responsible Artificial Intelligence** **Prof. Julian Fierrez** Universidad Autonoma de Madrid, Spain.
12:00-12:20	**Break**
	Session 2: Computer Vision
12:20-12:40	Quantifying Visual Similarity for Artistic Styles Priscila Sánchez Santana and Edgar Roman-Rangel
12:40-13:00	Automatic Classification of Zingiberales from RGB Images Manuel G. Forero, Carlos E. Beltrán, and Christian González-Santos
13:00-13:20	Classification of Rail Welding Defects based on the Bag of Visual Words Approach Mohale Molefe and Jules-Raymond Tapamo
13:20-13:40	Fast Background Subtraction and Graph Cut for Thermal Pedestrian Detection Oluwakorede M. Oluyide, Jules-Raymond Tapamo, and Tom Walingo
13:40-15:00	**Break(Lunch)**
	Session 3: Pattern Recognition Techniques
15:00-15:20	Unsupervised Feature Selection Methodology for Analysis of Bacterial Taxonomy Profiles Saúl Solorio-Fernández, J. Ariel Carrasco-Ochoa, and José Fco. Martínez-Trinidad
15:20-15:40	A Comparative Study of Two Algorithms for Computing the Shortest Reducts: MiLIT and MinReduct Vladímir Rodríguez-Diez, José Fco. Martínez-Trinidad, J. Ariel Carrasco-Ochoa, Manuel S. Lazo-Cortés, and J. Arturo Olvera-López
15.40-16:00	Extremal Topologies for the Merrifield-Simmons Index on Dynamic Trees Bello P., Rodríguez M., and De Ita G.
16:00-16:20	Experimental Comparison of Oversampling Methods for Mixed Datasets Fredy Rodríguez-Torres, Jesús A. Carrasco-Ochoa, and José Fco. Martínez-Trinidad
16:20-16:40	Restoration of Range Images by the Gaussian Pyramid Method, Testing Different Interpolation Techniques to Select the Best Performance Enrique Chavira Calderón and Alejandra Cruz-Bernal

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Thursday June 24 (Mexican Time UTC-5)	
	Session 4: Image Processing and Analysis
9:00-9:20	Development of a Method for Identifying People by Processing Digital Images from Handprint Victor A. Tuesta-Monteza, Barny N. Cespedes-Ordoñez, Heber I. Mejia-Cabrera, and Manuel G. Forero
9:20-9:40	Finding the Optimum Bit-quad Patterns for Computing the Euler Number of 2D Binary Images using Simulated Annealing Wilfrido Gómez-Flores, Humberto Sossa, and Fernando Arce
9:40-10:00	Perceptual and Pixel-Wise Information for Visual Novelty Detection Miguel A. Palacios-Alonso, Hugo Jair Escalante, and Luis Enrique Sucar
10:00-10:20	Multi-core Median Redescending M-Estimator for Impulsive Denoising in Color Images Dante Mújica-Vargas, Arturo Rendón-Castro, Manuel Matuz-Cruz, and Christian Garcia-Aquino
10:20-10:40	A Comparative Study of 3D Plant Modeling Systems based on Low-cost 2D LiDAR and Kinect Harold Murcia, David Sanabri, Dehyro Méndez, and Manuel G. Forero
10:40-11:00	**Break**
11:00-12:00	Keynote Address ## An introduction to Social AI **Prof. Alessandro Vinciarelli** Full Professor at the School of Computing Science and Associate Academic at the Institute of Neuroscience and Psychology, University of Glasgow, UK.
12:00-12:20	**Break**
	Session 5: Image Processing and Analysis / Medical Applications of Pattern Recognition
12:20-12:40	Evaluation of Denoising Algorithms for Source Camera Linking Diego Azael Salazar, Ana Elena Ramirez-Rodriguez, Mariko Nakano, Manuel Cedillo-Hernandez, and Hector Perez-Meana
12:40-13:00	Texture based Supervised Learning for Crater-like Structures Recognition using ALOS / PALSAR Images Nancy Jimenez-Martinez, Raquel Diaz-Hernandez, Marius Ramirez-Cardona, and Leopoldo Altamirano-Robles
13:00-13:20	Lung-nodule Segmentation using a Convolutional Neural Network with the U-Net Architecture Vicente Hernández-Solis, Arturo Téllez-Velázquez, Antonio Orantes-Molina, and Raúl Cruz-Barbosa
13:20-13:40	W-net: a Convolutional Neural Network for Retinal Vessel Segmentation Alan Reyes-Figueroa and Mariano Rivera
13:40-15:00	**Break(Lunch)**
	Session 6: Medical Applications of Pattern Recognition
15:00-15:20	A Comparison Study of EEG Signals Classifiers for Inter-subject Generalization Carlos Emiliano Solórzano-Espíndola, Humberto Sossa, and Erik Zamora
15:20-15:40	COVID-19 Related Pneumonia Detection in Lung Ultrasound Michael Stiven Ramirez Campos, Santiago Saavedra Bautista, Jose Vicente Alzate Guerrero, Sandra Cancino Suárez, and Juan Manuel López López
15.40-16:00	Breastfeeding and Caries. A Relationship Analysis to Develop a Computer-Assisted Diagnosis using Random Forest Laura A. Zanella-Calzada, Carlos E. Galván-Tejada, Nubia M. Chávez-Lamas, Karen E. Villagrana-Bañuelos, Jorge I. Galván-Tejada, and Hamurabi Gamboa-Rosales
16:00-16:20	Multi-target Attachment for Surgical Instrument Tracking Eberto Benjumea, Juan S. Sierra, Jhacson Meza, and Andres G. Marrugo
16:20-16:40	Novel Features for Glaucoma Detection in Fundus Images Juan A. González Urquijo, Jessica D. Sánchez Fonseca, Juan M. López López, and Sandra Cancino Suárez

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Friday June 25 (Mexican Time UTC-5)	
9:00-10:00	Keynote Address **Aligned representation learning for vision-language understanding** **Prof. Lei Zhang** Principal Researcher and Research Manager of the computer vision research group in Microsoft Cloud & AI, USA
10:00-10:20	**Break**
	Session 7: Neural Networks and Deep Learning
10:20-10:40	Neuroevolution for Sentiment Analysis in Tweets Written in Mexican Spanish José-Clemente Hernández-Hernández, Efrén Mezura-Montes, Guillermo-de-Jesús Hoyos-Rivera, and Omar Rodríguez-López
10:40-11:00	Neovascularization Detection on Optic Disc Region using Deep Learning Cesar Carrillo-Gomez, Mariko Nakano, Ana Gonzalez-H.Leon, Juan Carlos Romo-Aguas, Hugo Quiroz-Mercado, and Osvaldo Lopez-Garcia
11:00-11:20	Metric Localisation for the NAO Robot Oswualdo Alquisiris-Quecha and Jose Martinez-Carranza
11:20-11:40	Multi-Source Transfer Learning for Deep Reinforcement Learning Jesús García-Ramírez, Eduardo Morales, and Hugo Jair Escalante
11:40-12:00	**Break**
	Session 8: Neural Networks and Deep Learning
12:00-12:20	Efficient Training of Deep Learning Models through Improved Adaptive Sampling Jorge Ivan Avalos-López, Alfonso Rojas-Domínguez, Manuel Ornelas-Rodríguez, Martín Carpio, and S. Ivvan Valdez
12:20-12:40	Graph Representation for Learning the Traveling Salesman Problem Omar Gutiérrez, Erik Zamora, and Ricardo Menchaca
12:40-13:00	Satellite Imagery Classification using Shallow and Deep Learning Approaches Michelle Sainos-Vizuett and Irvin Hussein Lopez-Nava
13:00-13:20	Skeletal Age Estimation from Hand Radiographs using Ensemble Deep Learning Divyan Hirasen, Verosha Pillay, Serestina Viriri, and Mandlenkosi Gwetu
13:20-14:00	**Final Meeting**