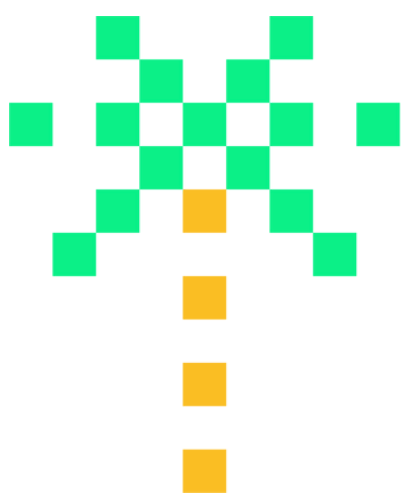




CAIP²⁰ 25

LAS PALMAS DE GRAN CANARIA

Scientific Program

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General overview

CAIP 2025	Monday 22	Tuesday 23	Wednesday 24	Thursday 25	
8:30-9:00		Registration			
9:00-10:30		Session 3	Session 6	Session 10	
10:30-11:00	Registration	Coffe Break	Coffe Break	Coffe Break	
11:00-11:30		Keynote (A. Jain)	Keynote (N. Bianchi-Berthouze)	Session 11	
11:30-12:00	Opening session				
12:00-13:00	Session Contest				Session 4
13:00-14:30	Lunch	Lunch	Lunch	Closing sesión (15')	
14:30-15:30	Session 1	Keynote (J. Bulchand)	Session 8		
15:30-16:00	Coffe Break	Coffe Break	Coffe Break		
16:00-17:30	Session 2	Session 5	Session 9		
17:30-17:45					
18:30-20:00		Las Palmas visit			
20:00-20:30			Gala dinner		
20:30 – 22:00	Welcome reception				

Monday 22 September 2025

- 11:30-12:00** **Opening session**
- 12:00-13:00** **Pedestrian Attribute Recognition Contest**
Chair: *Carlos Travieso González*
- 12:00-12:15** **100: A Region-Aware Multi-Modal Framework for Pedestrian Attribute Recognition via CLIP and Graph Neural Networks**
Bhat, Mudasar; Lin, Daw-tung
- 12:15-12:30** **101: Multi-Task Pedestrian Attribute Classification Using ConvNeXt with Advanced Data Augmentation**
Kairanbay, Magzhan; Salman, Ali
- 12:30-12:45** **118: Leveraging Generalist VQA Models to improve Zero-Shot Pedestrian Attribute Recognition**
Salas-Cáceres, José
- 12:45-13:00** **61: An extended dataset and a baseline for pedestrian attribute recognition with advanced neural networks** *Vento, Bruno; Greco, Antonio*
- 13:00-14:30** **Lunch break**
- 14:30-15:30** **Session 1: Image Segmentation I**
Innovative segmentation techniques applied in diverse scenarios including camouflaged objects, insects, thermal imagery, and microscopy.
Chair: *Daniel Riccio*
- 14:30-14:45** **3: Walk the Lines 2: Contour Tracking for Detailed Segmentation of Infrared Ships and Other Objects**
Kelm, André; Braeschke, Max; Gülsoylu, Emre; Frintrop, Simone
- 14:45-15:00** **18: Dirichlet Process Mixture Model and Markov Random Field for PolSAR Image Segmentation**
Bdiri, Wassim; Bouhlef, Nizar; Méric, Stéphane; Pottier, Eric; Kallel, Fathi
- 15:00-15:15** **27: Semantic Segmentation for Coastal Monitoring: Region Extraction and Overtopping Detection**
Sanfiel-Reyes, Fernando; Suárez-Ramírez, Jonay; Alemán-flores, Miguel; Monzón, Nelson
- 15:15-15:30** **33: Unsupervised Mineral Segmentation with Graph Neural Networks and Multi-Modal SEM Data**
Repka, Samuel; Eerola, Tuomas; Motl, David; Výravský, Jakub; Zemčík, Pavel
- 15:30-16:00** **Coffee Break**

- 16:00-17:30** **Session 2: Biomedical Imaging and Diagnostics**
Computer vision techniques applied to medical imaging, pathology detection, and biological classification tasks.
Chair: Óscar Déniz Suárez
- 16:00-16:15** **12: Ensuring the Origin of Cytological Whole Slide Images Through Preparation and Scanner Detection**
Barthe, Paul; Brixtel, Romain; Fontaine, Mathieu; Renouf, Arnaud; Bougleux, Sébastien; Lézoray, Olivier
- 16:15-16:30** **104: Enhancing Synthetic CT from CBCT via Multimodal Fusion and End-To-End Registration**
Tschuchnig, Maximilian; Lamminger, Lukas; Steininger, Philipp; Gadermayr, Michael
- 16:30-16:45** **114: Increasing Resolution of MRI Volumes Through Interleaved Slice Synthesis Based on Generative Adversarial Networks**
Rauso, Giuseppe; Sangiovanni, Mara; Barra, Silvio; Riccio, Daniel; Staffa, Mariacarla; D'Errico, Lorenzo; Longobardi, Francesco
- 16:45-17:00** **4: MDTACNet: MobileNet-DenseNet and Transformer Attention Hybrid Network for Multi-Crop and Multi-Disease Classification**
Jain, Anand; Jain, Anand; Nain, Neeta
- 17:00-17:15** **93: What Does Gait Reveal About Health? Investigating Human Motion as an Indicator**
Aguilar-Ortega, Rafael; Yu, Shiqi; Marín-Jiménez, Nuria; Marín-Jiménez, Manuel J.
- 17:15-17:30** **79: Predicting Sheep Body Condition Scores via Explainable Deep Learning Model**
Hammouda, Nourelhouda; Mahfoudh, Mariem; Grati, Rima; Boukadi, Khouloud
- 20:00-22:00** **Welcome reception**

Tuesday 23 September 2025

- 9:00-10:30** **Session 3: Model Robustness and Generalization**
Strategies to improve model stability and adaptability in the presence of noise, bias, or distributional shift.
Chair: David Freire-Obregón
- 9:00-9:15** **20: Simultaneous Robustness and Generalization Using Nearest Neighbor Classifiers**
Deniz Suarez, Oscar; Bueno, Gloria; Pedraza, Anibal; Singh, Harbinder
- 9:15-9:30** **31: Adaptive Model Selection for Expanded Post Hoc Debiasing and Mitigating Varying Degrees of Spurious Correlations**
Blunk, Jan; Bodesheim, Paul; Denzler, Joachim
- 9:30-9:45** **67: SimEx-ViT: Explainable Vision Transformer with Similarity-Based Attention Modulation**
Rengaraj, Selventhiran; Das, Satyajit; Rajalingam, Vish
- 9:45-10:00** **73: Robust Logit to Enhance Stochastic Neural Network Adversarial Robustness**
Dardour, Omar; Aguilar, Eduardo; Zaied, Mourad; Radeva, Petia
- 10:00-10:15** **88: Effective Relationship Between Characteristics of Training Data and Learning Progress on Knowledge Distillation for Image Recognition**
Mori, Minoru; Kogawa, Yuta
- 10:15-10:30** **35: SelfExplaNETory: Improving Classification Accuracy with Local Post Hoc Interpretation**
Poštić, Suraja; Subašić, Marko
- 10:30-11:00** **Coffee Break**
- 11:00-12:00** **Keynote Lecture: Biometrics: Successes, Innovations and Challenges**
Anil K. Jain
Chair: Modesto Castrillón-Santana
- 12:00-13:00** **Session 4: 3D Vision and Reconstruction I**
Three-dimensional reconstruction using NeRFs, multiview setups, and high-precision mesh extraction for various applications.
Chair: Nelson Monzón-López
- 12:00-12:15** **8: Framework for Generation of Moment Invariants by Tensor Method**
Suk, Tomáš; Bujack, Roxana
- 12:15-12:30** **44: HAME-NeRF: High Accuracy Mesh Extraction Leveraging Neural Radiance Fields**
Frasiolas, Panagiotis; Cheimariotis, Grigorios-Aris; Papadopoulos, Panos; Zarpalas Dimitrios
- 12:30-12:45** **48: FaDeN: Fast Depth-Supervised NeRFs with RGB-D Cameras**
Mustaniemi, Janne; Liu, Li; Heikkilä, Janne
- 12:45-13:00** **87: Corruption-Aware Fusion for LiDAR-Camera Based 3D Object Detection**
Alfia, Ron; Mendelson, Avi
- 13:00-14:30** **Lunch break**

- 14:30-15:30** **Keynote Lecture: Understanding tourists' behavior patterns in order to improve residents' well-being**
Jacques Bulchand Gidumal
Chair: *Modesto Castrillón-Santana*
- 15:30-16:00** **Coffee Break**
- 16:00-17:30** **Session 5: Multimodal and Vision-Language Models**
Integration of visual, textual, and auditory inputs through large foundation models and multimodal learning.
Chair: *Manuel Mucientes*
- 16:00-16:15** **45: Automatic Audio Description: A Training-Free Approach Using Foundation Models**
Tapu, Ruxandra; Mocanu, Bogdan
- 16:15-16:30** **57: AMEST: Adaptive Morphologically Enhanced Subword Tokenization for Improved Language Model Perplexity**
Ansari, Labib; Joshi, Dhruvanshu; Mulye, Soham; Shah, Viraj; Udmale, Sandeep; Bhole, Girish
- 16:30-16:45** **65: Leveraging Vision-Language Models for Improving Detection of Obstacles on Railway Tracks**
Carletti, Vincenzo; Greco, Antonio; Saggese, Alessia; Spingola, Camilla; Vento, Bruno
- 16:45-17:00** **70: Generalizable Detection of Student Engagement in Online Learning Environments**
Pang, Lu; Siu, Tony; Alazzawe, Anis; Kant, Krishna; Latecki, Longin
- 17:00-17:15** **77: LLM-generated Semantic Co-occurrences for Multi-Label Food Recognition**
Ponte, Daniel; Aguilar, Eduardo; Ribera, Mireia; Radeva, Petia
- 17:15-17:30** **97: Tracing Information Flow in LLaMA Vision: A Step Toward Multimodal Understanding**
Saporita, Alessia; Pipoli, Vittorio; Bolelli, Federico; Baraldi, Lorenzo; Acquaviva, Andrea; Ficarra, Elisa
- 18:30 - 20:30** **Las Palmas Visit**

Wednesday 24 September 2025

- 9:00-10:30** **Session 6: Emerging Methods and Vision Applications**
Novel neural architectures and visual applications in climate science, urban mobility, and expressive movement.
Chair: Ángel Sappa
- 9:00-9:15** **55: Forecasting Sea Surface Temperature from Satellite Images with Graph Neural Networks**
C-Londoño, Giovanni A.; Sánchez, Javier; Rodríguez-Santana, Angel
- 9:15-9:30** **56: PLRF-NMS: A Piecewise Linear Rational Function in Non-Maximum Suppression**
Persson, Ivar; Ardö, Håkan; Nilsson, Mikael
- 9:30-9:45** **71: R3ST: A Synthetic Dataset with Real Trajectories for Urban Traffic Analysis**
Teglia, Simone; Melis Tonti, Claudia; Pro, Francesco ; Russo, Leonardo; Alfarano, Andrea; Pentassuglia, Matteo; Amerini, Irene
- 9:45-10:00** **75: Adaptive Meshes in Graph Neural Networks for Predicting Sea Surface Temperature Through Remote Sensing**
Reyes, José G. ; C-Londoño, Giovanni A.; Sánchez, Javier
- 10:00-10:15** **81: Beyond Splines: Legendre and Shmaliy Polynomial-KANs for Robust Image Recognition**
Moreno-Tagle, José Carlos; Olveres, Jimena; Escalante-Ramírez, Boris
- 10:15-10:30** **5: Emotion Recognition in Contemporary Dance Performances Using Laban Movement Analysis**
Turab, Muhammad; Colantoni, Philippe; Muselet, Damien ; Trémeau, Alain
- 10:30-11:00** **Coffee Break**
- 11:00-12:00** **Keynote Lecture: Affective-aware technology in real world applications**
Nadia Bianchi-Berthouze
Chair: Maria De Marsico
- 12:00-13:00** **Session 7: Image Segmentation II**
Innovative segmentation techniques applied in diverse scenarios including camouflaged objects, insects, thermal imagery, and microscopy.
Chair: Alain Tremeau
- 12:00-12:15** **37: A Deep-Learning-Based Method for Real-Time Barcode Segmentation on Edge CPUs**
Vezzali, Enrico; Vorabbi, Lorenzo; Grana, Costantino; Bolelli, Federico
- 12:15-12:30** **40: Edge-Aware Camouflaged Object Detection**
Suarez, Patricia; Sappa, Angel
- 12:30-12:45** **42: DVS-StereoInsect: An Event-based Stereo Dataset for Foreground-Background Insect Segmentation**
Gebler, Colin; Funk, Jonas; Pohle-Fröhlich, Regina; Wagner, Andreas
- 12:45-13:00** **60: ColorEM-Net: Automated Segmentation of Structures in Large-Scale Electron Microscopy Using Element-Derived Ground Truth**
Aswath, Anusha; Alsahaf, Ahmad M J; Duinkerken, B H Peter; Hoogenboom, Jacob P; Giepmans, Ben N G; Azzopardi, George
- 13:00-14:30** **Lunch break**

- 14:30-15:30** **Session 8: 3D Vision and Reconstruction II**
Three-dimensional reconstruction using NeRFs, multiview setups, and high-precision mesh extraction for various applications.
Chair: Tomáš Suk
- 14:30-14:45** **69: Sphere-Depth: A Benchmark for Depth Estimation Methods with Varying Spherical Camera Orientations**
Gazzeah, Soulayma; Mazzola, Giuseppe; Lo Presti, Liliana; La Cascia, Marco
- 14:45-15:00** **83: Image Valuation in NeRF-Based 3D Reconstruction**
Cheimariotis, Grigorios-Aris; Karakottas, Antonis; Chatzis, Vangelis; Kanlis, Angelos; Zarpalas, Dimitrios
- 15:00-15:15** **66: AnthroFormer3D: Automating 3D Body Measurement Extraction via Vision Transformers Using a Novel Dataset**
Baksh, Mohammad; Barner, Kenneth; Zafar, Muhammad Mohsin
- 15:15-15:30** **116: VolE++: A Text-Guided Point-cloud Framework for Food 3D Reconstruction and Volume Estimation**
Haroon, Umair; AlMughrabi, Ahmad; Marques, Ricardo; Radeva, Petia
- 15:30-16:00** **Coffee Break**
- 16:00-17:45** **Session 9: Facial and Video Recognition**
Advancements in face recognition, deepfake detection, 3D reconstruction, and video analysis in varied contexts.
Chair: Antonio Greco
- 16:00-16:15** **22: Adapting to the Wild: From Human Face to Animal Face Recognition**
De Marsico, Maria; Jain, Anil K.; Miranda, Michele; Orlando, Alessio
- 16:15-16:30** **24: Enhanced Deep Learning DeepFake Detection Integrating Handcrafted Features**
Hinke Navarro, Alejandro; Nieto Hidalgo, Mario; Espín López, Juan Manuel; Tapia Farias, Juan Eduardo
- 16:30-16:45** **32: Fast and Accurate 3D Face Reconstruction from Multiple Uncalibrated Images**
Lhallabi, Hassan; Chambon, Sylvie; Morin, Géraldine; Gasparini, Simone; Naturel, Xavier; Guenard, Jérôme
- 16:45-17:00** **46: Seeing through Wearables: A Comprehensive Face Recognition Dataset from Body Worn Cameras**
Hans, Sameer; Dugelay, Jean-Luc; Mohd Isa, Mohd Rizal
- 17:00-17:15** **108: RTFVE: Realtime Face Video Enhancement**
Jois, Varun; DiLillo, Antonella; Storer, James
- 17:15-17:30** **90: SPL-BEV: Soccer Player Localization and Birds-Eye-View Estimation**
Persson, Ivar; Ardö, Håkan; Nilsson, Mikael
- 17:30-17:45** **103: CANpose: A Cross-Attention Framework for Human Pose Recognition**
M. S., Subodh Raj; N. George, Sudhish; Raja, Kiran
- 20:00-22:00** **Gala Dinner**

Thursday 25 September 2025

- 9:00-10:30** **Session 10: Robotics, Interaction and Intelligent Systems**
Perception and collaboration between humans and robots, with applications in social robotics and industrial settings.
Chair: Javier Lorenzo-Navarro
- 9:00-9:15** **7: Multimodal Audio-Visual Emotion Recognition for Social Robotics**
De Simone, Giuseppe; Greco, Luca; Saggese, Alessia; Vento, Mario
- 9:15-9:30** **30: Enhancing Collaborative Image Classification via Spatio-Temporal Graph Neural Networks: A Proof-of-Concept Study on Human Group Decisions**
Mateos-Aparicio-Ruiz, Israel; Montealegre-Macias, Pedro; Deniz, Oscar; Pedraza, Anibal; Bueno, Gloria
- 9:30-9:45** **74: DADO: A Depth-Attention Framework for Object Discovery**
Talavera Martinez, Estefania; Radeva, Petia; Gonzalez, Federico
- 9:45-10:00** **109: Ozone Concentration Estimation from Infrared Images Using Extinction Coefficient**
Duminil, Alexandra; Tarel, Jean-Philippe; Dumoulin, Jean
- 10:00-10:15** **110: Multi-modal Human-Robot Collaboration in Production Lines Through Speech Commands and Gestures**
Greco, Antonio; Carletti, Vincenzo; Longobardi, Domenico; Ritrovato, Pierluigi; Saggese, Alessia; Vento, Mario
- 10:15-10:30** **68: Synthesizing Images with Different Exposure Settings for Low-Light Image Enhancement**
Alhawwary, Ahmed; Mustaniemi, Janne; Heikkilä, Janne
- 10:30-11:00** **Coffee Break**
- 11:00-13:00** **Session 11: Object Detection and Applications**
New object detection strategies addressing challenges in agriculture, biodiversity, transportation, and imbalanced datasets.
Chair: Aythami Morales
- 11:00-11:15** **19: Enhancing Agricultural Disease Diagnosis: YOLO-Based Detection of Root Rot in Beans**
Torres, Renato; Borges, Dibio
- 11:15-11:30** **23: Vision on the Move: Automated Hazardous Material Plate Detection in Freight Transport**
Tijink, Melissa; Levendeev, Stanislav; Nieuwenhuis, Ewaldo; Spreeuwes, Luuk; Strisciuglio, Nicola; Talavera, Estefanía
- 11:30-11:45** **28: VIGIA-E: Density-Aware Patch Selection for Edge-Based Small Object Detection with PTZ Cameras**
Suárez-Ramírez, Jonay; Sánchez-Cordero, Kiara; Monzón, Nelson
- 11:45-12:00** **72: SMSCI: Simultaneous Modeling of Social and Contextual Interactions for Multi Pedestrian Trajectory Prediction**
Zaier, Mayssa; Wannous, Hazem; Drira, Hassen
- 12:00-12:15** **54: Exploring Open-Vocabulary Models for Category-Free Detection**
Garcia Fernandez, Pablo; Cores, Daniel; Mucientes, Manuel
- 12:15-12:30** **64: Synthetic Data for Robust Runway Detection**
Chigot, Estelle; Wilson, Dennis; Oberlin, Thomas; Ghrib, Meriem; Jimenez, Fabrice

Scientific Program

- 12:30-12:45** **107: Identification of Buriti (*Mauritia flexuosa*) and Palmito Juçara (*Euterpe edulis*) Species Using RT-DETR through High-Resolution Images Captured by UAV**
Silva, Isaac; Barbalho, Sanderson; Bergamini, Leonardo; Takahashi, Frederico; Borges, Dibio
- 12:45-13:00** **13: LTBoost: Boosting Recall Uniformity in Long-Tailed Learning for Camera Trap Datasets**
Mohammady Gharasuie, Morteza; Wang, Fengjiao; Mukkamala, Ravi; Sun, Jiangwang
- 13:00-13:15** **Closing session**



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