

Wednesday - November 13



Guatemala Time

Chairs: Dr Natasha Lepore and Dr. Andrea Lara

Room: Salón Landívar

Registration & Opening

8:00

Chair: Dr. Andrea Lara

Room: Salón Landívar

Keynote Speaker: Dr. Christian Baumgartner

Talk: "Digital twins and ML/DL-based concepts for bioinformation processing from the cell to the whole human and their applications in clinical practice"

9:30

Coffee break

10:30

1. Image Based Medical Procedures

Chair: Dr. Darryl Hwang
Room: Salón Landívar

2. Brain Imaging I

Chair: Dr. Robert Avery
Room: Salón del obispo

11:00

Are Explanations Helpful? A Comparative Analysis of Explainability Methods in Skin Lesion Classifiers*
Presenter: Rosa Yuliana Gabriela

Investigating the Effects of Computed Tomography Reconstruction Settings from Multiple Scanners on IBSI Compliant Radiomic Features
Presenter: Katharine Sweetland

ViT-based Automated Detection of Cervical Intraepithelial Neoplasia in Colposcopy Images
Presenter: Camilo A. Tenjo

Magnetic Resonance Imaging based Texture Analysis Predicts Conversion to Mild Cognitive Impairment and Alzheimer Disease
Presenter: Bino A. Varghese

LF Deface: An Automated Tool for Defacing Pediatric Brain Low Field MRI*
Presenter: Eryn Perry

Assessing MedSAM's Generalization to White Matter Hyperintensities in Magnetic Resonance Imaging
Presenter: Diedre Santos

Comparison of Explainable AI Models for MRI-based Alzheimer's Disease Classification
Presenter: Tamoghna Chattopadhyay

Longitudinal multi-site modeling of brain atrophy trajectories associated with amyloid and tau
Presenter: Alyssa Zhu

Lunch sponsored by Galileo University

12:30

Chair: Dr. Leticia Rittner

Room: Salón Landívar

Keynote Speaker: Dr. Sandra Ávila

Talk: "The day I discovered I was collaborating on a Eugenics skin cancer project"

14:00

Coffee break

15:00

Chair: Dr. Natasha Lepore

Room: Salón Landívar

Special session

"Designing AI for impact in global health: principles and techniques Sponsored by Global Health Labs"
Speakers: Dr. Padmanabhan Anandan and Dr. Charles Delahunt
Global Health Labs, Inc.

15:30

3. Deep learning I

Chair: Dr. Sandra Ávila
Room: Salón Landívar

4. Digital and Global Health

Chair: Dr. Charles Delahunt
Room: Salón del obispo

17:00

Tiny Lungs, Big Challenges: Pediatric and Premature Lung Segmentation using Deep Learning
Presenter: Hareem Nisar

Machine and deep learning-based detection of the stapedius reflex for automatic cochlear implant fitting*
Presenter: Celine Desoyer

Automatic Glaucoma Classification and Justification Using a Large and Diverse Dataset*
Presenter: Kristhian Aguilar

Automated Detection and Segmentation of Breast Lesions in Contrast-Enhanced Mammograms
Presenter: Shubham Gujar

Non-contact breathing rate estimation in newborns during quiet sleep using video magnification techniques and a 3D Convolutional Neural Network
Presenter: Andrés Escobedo-Gordillo

A Structural Equation Model Linking Early-Life Stress to Adult Mental and Cardiovascular Disease
Presenter: Karim Lekadir

Requirements for Human-Centered Artificial Intelligence: A Heart Failure Study Across Europe and Latin America
Presenter: Xènia Puig Bosch

Understanding early-life stress impact on mental-physical comorbidity using machine learning
Presenter: Karim Lekadir

Fairness in Healthcare: Assessing Data Bias and Algorithmic Fairness
Presenter: Mariana Bento

18:30

19:00

Welcome Reception at Covent Capuchinas

* Papers nominated for the SIPAIM 2024 awards.



Thursday - November 14



Guatemala Time

Registration

8:00

Chair: Marius Linguraru

Room: Salón Landívar

Keynote Speaker: Dr. Robert Avery

Talk: "More Than Meets the Eye: The Impact of MRI Volumetrics and Radiomics on Clinical Care for a Rare Pediatric Disease"

9:00

Coffee break

10:00

5. Generative AI in Healthcare

Chair: Dr. Michaelle Perez
Room: Salón del obispo

6. Heart

Chair: Dr. Jorge Brieva
Room: Salón Landívar

10:30

Machine learning models for predicting the length of ICU stay using perioperative patterns
Presenter: Alexander Marlon Paredes Arellano

FLAIR synthesis including ischemic lesion-aware mechanisms from NCCT sequences
Presenter: Gustavo Adolfo Garzón Villamizar

Evaluation of Super Resolution Models for Generating Synthetic 3T T1W Images from 1.5T T1W Scans
Presenter: Bino A. Varghese

Personalized phenotype encoding and prediction of pathological head development from cross-sectional images*
Presenter: Antonio R. Porras

Effects of target images on outputs of style-transfer generative models for brain MRI harmonization*
Presenter: Alyssa Zhu

On the interpretability of AI cardiovascular risk models*
Presenter: Jean C. Polo Castro

Enhancing Heart Failure Management: Integrating AI with Telemonitoring Systems for Advanced Alarm-Based Solutions
Presenter: Joan Perramon

A domain data-driven metric to improve traditional visualization and interaction with ECG large databases
Presenter: Jean C. Polo Castro

Comparative analysis of deep neural network architectures for heart disease classification in electrocardiography signals*
Presenter: Andrés Felipe Muñoz

Evidence-Based Case Recommendation System for Cardiac Health Diagnosis Using Non-Negative Factorization Data-driven Similarity Approach
Presenter: Ángel Cruz

7. Digital Pathology

Chair: Dr. Christian Baumgartner
Room: Salón Landívar

8. Body Imaging I

Chair: Dr. Syed Anwar
Room: Salón del obispo

12:00

Trade-offs in deep learning model loss and configuration for sparse histological segmentation: a case study in pediatric ileal histology
Presenter: Sixten Heekin

Revisiting JPEG2000 for efficient and adaptable virtual microscopy
Presenter: Jorge Victorino

Domain Adaptation Strategies based on Color Normalisation for Histological Image Classification
Presenter: Juan Camilo Bayona Quesada

Evaluating Regions of Clinical Interest generated by Deep Recurrent Attention Models in Histological Images
Presenter: Julián Orlando Rodríguez villamizar

Systematic Approach to Identifying Sources of Variation in CT Radiomics: A Phantom Study
Presenter: Neha Yadav

CEM Radiomics for Distinguishing Benign vs Malignant Lesions in Patients with Invasive Breast Cancer or Benign Breast Lesions
Presenter: Shubham Gujar

Skin Lesion Classification using a Decentralized Peer-to-Peer Federated Learning Framework
Presenter: Dmitrii Kaplun

A Portable Embedded System For Skin Lesions Detection
Presenter: Giancarlo Lopez

Lunch sponsored by Galileo University

13:00

Poster session and Desserts
Coffee break

14:30

Room: Salón Landívar

Posters (CMT ID): 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81 and 82

9. Deep learning II

Chair: Dr. Eduardo Romero
Room: Salón Landívar

10. Biosignals

Chair: Dr. Julio Fajardo
Room: Salón del obispo

15:30

Improving Prenatal Alcohol Exposure classification using Data Augmentation in 3D Convolutional Neural Networks
Presenter: Mariana Pinheiro Bento

SERAU-Net: Snapshot Ensemble-aided Region-Aware Attention-based U-Net for Skin Lesion Segmentation
Presenter: Dmitrii Kaplun

Automatic Classification of Macular Edema in Retinal Fundus Images based on Deep Belief Networks
Presenter: Rafael A. García-Ramírez

Enhancing fMRS Data Quality and GABA Quantification Using SpectroViT: A Deep Learning Reconstruction Approach*
Presenter: Wesna Simone Bulla de Araujo

Novel ADHD Diagnostic Interface Based on EEG Spectrograms and Deep Learning Techniques
Presenter: Syed Anwar

Brain symmetry index correlates with time after stroke and lower limb function
Presenter: Bruna Mezzari Carlos

Optical Fiber Force Myography Sensor for Fatigue Estimation in Functional Electrostimulation-induced Rehabilitation Systems
Presenter: Julio Fajardo

Exploring Complex Human-Prosthetic Interactions: Musculoskeletal Models for Biomechanical Analysis.
Presenter: Adan Yusseff Domínguez

How Does Your Brain Process Words? EEG and ET Co-registration in a Reading Task Among Chilean University Students.
Presenter: Maria Paz Troncoso

Optimal Dataset Size for Fine-Tuning sEMG-Based Hand Gesture Recognition in Rehabilitation Prosthesis
Presenter: Andrés Escobedo-Gordillo

17:00

SIPAIM Dinner

19:00

* Papers nominated for the SIPAIM 2024 awards.



Friday - November 15



Guatemala Time

8:00

Registration

Chair: Jully González

Room:

Sipaim Sponsored Breakfast
Panel On Women In Science

8:30

Chair: Dr. Pamela Guevara

Room: Salón Landívar

Keynote Speaker: Dr. Enzo Ferrante
Talk: "Improving anatomical plausibility and auditing fairness in deep segmentation networks"

9:30

Coffee break

10:30

11. Brain Imaging II

Chair: Dr. Antonio Porras
Room: Salón del obispo

12. Body Imaging II

Chair: Dr. Enzo Ferrante
Room: Salón Landívar

11:00

Fast White Matter Fiber Clustering Using Variational Autoencoder Latent Space*

Presenter: Sebastián Navarrete Caro

Neural Architecture Search Using Trajectory Metaheuristics to Classify Coronary Stenosis

Presenter: Erick Franco

Is DL-based reconstruction for fiber orientation distribution (FOD) comparable to MSMT-based FOD for fiber bundle analysis?*

Presenter: Natalia Vidal Barraza

Deep-Learning prediction of outcome after Cardiac Resynchronization Therapy

Presenter: Paulo Tostes

BundleAGE: Predicting White Matter Age using Along-Tract Microstructural Profiles from Diffusion MRI*

Presenter: Yixue Wendy Feng

Evaluation of Dataset Distribution in Biomedical Image Classification against Image Acquisition Distortions

Presenter: Santiago Aguilera González

Training a ViT model on shape signatures for quality control of MRI corpus callosum segmentations

Presenter:

AI-based Automatic Segmentation of Sinonasal Cavity in Cone-Beam Computed Tomography

Presenter: JP Illescas

Room: Salón Landívar

Closing ceremony and Awards

12:30

13:00

* Papers nominated for the SIPAIM 2024 awards.

