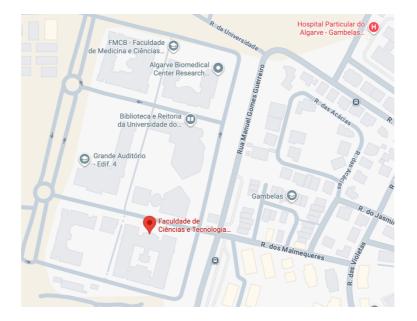# Program
(Campus de Gambelas, Faculdade de Ciências e Tecnologia – Building C8)

SCHEDULE

08.30 – 09.00
C8 HALL

REGISTRATION
Accreditation and Registration

09.00 – 09.30
C8 Green Amphitheatre

OPENING SESSION
EPIA OPENING CEREMONY

Paulo Águas (Rector of the University of Algarve)
Carlos Guerrero (Dean of the Faculty of Sciences and Technology)
Luís Serra Coelho (Dean of the Faculty of Economics)
Carlos Baia (Faro City Council)
José Valente de Oliveira (Local Organization)
João Leite (Organization)
Francesco Berrettini (Empowered Startups, Director)
Goreti Marreiros (Chair of APPIA)

09.30 – 11.00

AIM-01
C8 Green Amphitheatre
CHAIR: Manuel Filipe Santos

- **AI-Driven Mobile Solution for Early Detection and Management of Diabetic Foot Ulcers**
  António Chaves, Rúben Ganança, Tayan Peller, António Abelha, José Machado, and Hugo Peixoto
- **Deep neural networks to the detection of lumbar hernias: methodology and preliminary results**
  António Fernandes, João Rodriguez, Susana Moleirinho, Irina Trofimenko, Ekaterina Guseva, Alexander Martinovich, Ilzane Morais, Louise Bisolo, Luis Mendes Gomes and José Machado
- **Convolutional Spiking Neural Networks with Molecular Fingerprints for Drug Discovery**
  Dinu Bosîi, Luis H. M. Torres, Joel P. Arrais and Bernardete Ribeiro
- **Deep Learning-Based Microbial Colony Detection on Agar Plates**
  Miguel Silva, Diogo Martinho and Goreti Marreiros

AI4EC-01
Amphitheatre C8.-1.8
CHAIR: Nuno Marques

- **AI-driven adaptive photogrammetry for Built Heritage information modelling**
  Michele Russo, Enrico Pupi, Giulia Flenghi and Roberta Spallone
- **From synthetic data to deep learning enhancements in muon tomography for cultural heritage**
  Davide Cifarelli, Daniele Corradetti and Lorenzo Pezzotti
- **Challenging Fortification Attribution Through AI-Assisted Geometric Analysis**
  Olha Tikhonova
- **Coral and Fish Segmentation Enhanced by Image Restoration and Assisted Labeling via a Foundation Model**
  Fernando Duarte, Nuno Lau, Eurico Pedrosa, Paulo Lopes and Pramod Kumar Maurya

KDBI-01
Amphitheatre C8. -1.8.1
CHAIR: João Gama

- **Online Data Augmentation for Forecasting with Deep Learning**
  Vítor Cerqueira, Moisés Santos, Luis Roque, Yassine Baghoussi and Carlos Soares
- **Time Series Modeling for Smart Energy Consumption in Industry 4.0**
  Lara Ferreira, João Lopes, Júlio Duarte, Daniela Ferreira, Rogério Pires, Isabel Silva and Manuel Filipe Santos
- **Towards Smarter Property Recommendations in Complex Housing Market**
  Ana Nogueira, José Pinto, João Silva, Gonçalo Nunes, Manuel Curral and Ricardo Sousa
- **Feature-tokeniser transformer autoencoders for interpretable tabular anomaly detection**
  Jacques Carl Huskisson, Jacomine Grobler and Anton H Basson

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11.00 – 11.30
C8 HALL

COFFEE BREAK

11.30 – 12.30
C8 Green Amphitheatre

KEYNOTE
CHAIR: José Valente de Oliveira

FRANS A. OLIEHOEK
Model-based reinforcement learning and abstraction

12.30 – 14.00
RESTAURANT

LUNCH

14.00 – 16.00

AIM-02 + AITMA-01
C8 Green Amphitheatre
CHAIR: João Lopes

- **Towards Intelligent Low-Code Systems: A systematic review**
  Daniel Sá, Tiago Guimarães, and Manuel Santos
- **Unveiling microRNA biomarkers for Breast Cancer Sub-typing using Discriminative Models**
  João Mota, José Romano, Ana Rita Grosso, João Conde, Bárbara Mendes, and David Semedo
- **Smartphone Keyboard Typing for Rheumatic Disease Identification: A Machine Learning Approach**
  Pedro Matias, Pedro Afonseca, Francisco Nunes, Ana Rita Henriques, Cátia Gonçalves, Ana Rodrigues, and Inês Sousa
- **Dual Watermarking with Deep Learning for Enhancing Security of Medical Images**
  Rajat Sood, Jyoti Rani, and Ashima Anand
- **Knowledge-aware Clinical Narrative Extraction using Ontologies and Knowledge Graphs**
  Maria Leite, Rita Silva, Nuno Guimarães, Lise Stork, and Alípio Jorge

GenAI
Amphitheatre C8.-1.8
CHAIR: José Machado

- **SynDocDis: A Metadata-Driven Framework for Generating Synthetic Physician Discussions Using Large Language Models**
  Beny Rubinstein and Sérgio Matos
- **Large Language Model Framework for Log Sequence Anomaly Detection**
  João Reis, Jorge G. Barbosa and Miguel Areias
- **Data Generation in Healthcare NLP: An LLM-Based Framework for Portuguese Clinical NER**
  Luís Henriques, Nuno Guimarães and Alípio Jorge
- **RAG-EVO: Increasing the Reliability and Autonomy of LLMs via Iterative Recovery**
  Diego C. Rodrigues, Daniela Trevisan, Sílvia Araújo and David Nadler Prata
- **Generating Synthetic Medical Dialogues in European Portuguese: Preliminary Results with GPT models**
  Fernando Larissa Montenegro, Luis Mendes Gomes, and José Machado

KDBI-02 + AI4IS-01
Amphitheatre C8. -1.8.1
CHAIR: Carlos Soares

- **Benchmarking Time Series Feature Extraction for Algorithm Selection**
  Moisés Santos, Vitor Cerqueira and Carlos Soares
- **LisHAB – a Housing Policies Agent-Based Simulation Model**
  Miguel Alves, Pedro A. Santos, and João Dias
- **Learning Coastal Upwelling Patterns from Wind Velocity via Interpretable Tree Models**
  Susana Nascimento, Pedro Caldeirão, Paulo Relvas and Boris Mirkin
- **Managing Missing Data and Predictions in Short Time Series**
  Francisco António and Luís Cavique
- **Intelligent models for predicting water quality in the textile processes**
  Inês Lima, Rita Miranda and Filipe Portela
- **DlensRisk: A Deep Learning Framework for Financial Risk Assessment in the Oil and Gas Industry**
  Aguinaldo Junio Flor and Adiel T. de Almeida Filho **(No Show)**

16.00 – 16.30
C8 HALL

COFFEE BREAK

16.30 – 17.15
TRANSFER

TRANSFER TO FARO CITY HALL

Shuttle service to Faro City Hall will be available for participants who require transportation. **This service will be available for one-way trip only**

17.15 – 18.30
EXTERNAL

FARO CITY HALL WELCOME RECEPTION
(location)

SCHEDULE

08.30 – 09.00
C8 HALL

REGISTRATION
Accreditation and Registration

09.00 – 11.00

AIL-01
C8 Green Amphitheatre
CHAIR: Paulo Novais

- **The Dawn of a XAI Road to Humachinal-Centric Justifications in EU Consumer Credit Denials**
  Diogo Morgado Rebelo, Francisco Andrade and Paulo Novais

- **Autonomous Systems are Mere Tools: Legal Fiction or Reality?**
  Xiaoshui Zhai

- **Legal Discrimination in Focus: Empirical Assessment of LLMs under the European Convention on Human Rights**
  Tatiana Botskina

- **Integrating Artificial Intelligence into goAML by Indonesia's FIU: A Transnational Legal Process Approach to Combatting Terrorist Financing via Cryptocurrency Crowdfunding**
  Ika Riswanti Putranti and Muhammad Faiq Adi Pratomo

- **Retrieval-Augmented Generation for Addressing Consumer Complaints**
  David Lima, Pedro A. Santos and João Dias

AI4IS-02 + AIoTA
Amphitheatre C8.-1.8
CHAIR: Pedro Cardoso

- **Food Waste Detection in Canteen Plates with Visual Large Language Models**
  Raffaele Calì, João Ferreira, Paulino Cerqueira and Jorge Ribeiro

- **Multi-Agent Simulation of Manufacturing Networks: Autonomous and Adaptive Decision-Making for Industry 4.0**
  Alysson Pereira E Pereira, Frederic Menezes Ferreira and Alexandre Cesar Muniz de Oliveira

- **Optimizing 2D Packing Strategies for Autoclave Loading using Deep Reinforcement Learning**
  Victor Pugliese, Diogo S. Carvalho, Oseias F. Ferreira, Fabio A. Faria and Francisco S. Melo

- **CVVEFM layer: an edge detection inspired layer for image segmentation tasks**
  Khalid El Amraoui, Mustapha El Alaoui, Aziz Amari, Hassane Roukhe, Mohamed El Ansari, Lhoussaine Masmoudi and José Valente de Oliveira

- **Intelligent models for predicting water quality in the textile processes**
  Inês Lima, Rita Miranda and Filipe Portela
  (moved to KDBI-02 + AI4IS-01)

AI4EC-02 + AITMA-02
Amphitheatre C8. -1.8.1
CHAIR: Roberta Spallone

- **Multimodal Pipeline for Underwater Artifact Detection and 3D Reconstruction with VLM and Gaussian Splatting**
  Niccolò Simonato, Daniele Corradetti and José Bettencourt

- **From Facades to 3D Models: Automating Building Reconstruction with Deep Learning and Texture Analysis**
  Oraib Almegdadi, Sofia Monteiro, Nuno C. Marques and Rui Nóbrega

- **Crack Detection in Pavement Imagery: Evaluating U-Net Variants**
  Gonçalo Silva, Oraib Almegdadi, Fátima Batista, João Marcelino and Nuno Marques

- **Experimental LINCS Dam for Low-Cost Monitoring & Synthetic Data**
  Daniel Eugénio, João Marcelino, Ricardo Santos, Nuno Marques and João Manso

- **Enhancing privacy: Using blurred images with MobileNet SSD**
  Fernando Martins, Karolina Baras and Eduardo Marques

11.00 – 11.30
C8 HALL

COFFEE BREAK

11.30 – 12.30
C8 Green Amphitheatre

KEYNOTE
CHAIR: João Leite

PAOLO TORRONI
Argument mining and Reasoning with Large Language Models

12.30 – 14.00
RESTAURANT

LUNCH

14.00 – 15.30
C8 Sala de Atos

APPIA GENERAL ASSEMBLY

15.30 – 16.00
C8 HALL

COFFEE BREAK

16.00 – 16.45
TRANSFER

TRANSFER TO FARO

Shuttle service to Faro will be available for participants who require transportation.

16.45 – 18.15
EXTERNAL

SOCIAL EVENT
HISTORIC FARO

18.15 – 19.00
TRANSFER

TRANSFER TO FARO ISLAND

Shuttle service to the Faro Island will be available for participants who require transportation.

19.00 – 22.00
EXTERNAL

CONFERENCE BANQUET
RESTAURANT ELEMENTOS (Location)

SCHEDULE

08.30 – 09.00 C8 HALL	**REGISTRATION** Accreditation and Registration

09.00 – 11.00

NLP-TeMA-01 + AITMA-03
C8 FE Sala de Atos
CHAIR: Alípio Jorge

- **Prompting LLMs for Relation Classification in Portuguese: Is it Worth it?**
  Tomás Pinto, Bruno Ferreira, Catarina Silva and Hugo Gonçalo Oliveira
- **Cross-Lingual Information Retrieval in Tetun for Ad-Hoc Search**
  Altedio Araújo, Gabriel de Jesus and Sérgio Nunes
- **User Behavior in Sports Search: Entity-Centric Query and Click Log Analysis**
  João Damas and Sérgio Nunes
- **Multi-Agent Retrieval-Augmented Generation for Enhancing Answer Generation and Knowledge Retrieval**
  Deepak Kumar and Bhavesh Jain
- **From Homeostatic Principles to Discrete Emotions in an Agent Architecture - the HOmeostatic Regulation Architecture (HORA)**
  Hélder Bastos and Luís Correia

AITS
Amphitheatre C8.-1.8
CHAIR: Carlos Soares

- **A MaxSAT approach for the train timetabling problem with route choice and other features**
  Filipe Gouveia, Luís Albino and Ricardo L. Saldanha
- **Driving Scene Context-Augmented Trajectory Prediction with Risk-Aware Decision Reasoning using Multimodal LLM**
  Kim Sunghun, Hong Seokjun, Jin Joobin and Noh Byeongjoon
- **RailSafeNet: Visual Scene Understanding for Tram Safety**
  Ondřej Valach and Ivan Gruber
- **Interpretable Predictive Maintenance: Combining Anomaly Detection with Quantitative Root Cause Analysis**
  Inês Barbosa, Bruno Veloso and João Gama
- Deep Reinforcement Learning for the Berth Allocation Problem with Inventory Control: A DQN-LSTM Approach
  Victor Hugo Barros and Alexandre César Oliveira (no show)

AIL-02 + ERAI
Amphitheatre C8. -1.8.1
CHAIR: Pedro Martins

- **Benefit-Harm Assessment of AI in the Justice System**
  Inesa Stolper
- **Not Knowing, Yet Living: AI and the Modern Legal Trial of Prometheus in Medicine**
  Uchenna Nnawuchi and Carlisle George
- **Evaluating Coreset Selection with Coverage and Density: A Data Quality Perspective**
  Bárbara Capelo, Maria Russo, André Carreiro, Hugo Gamboa and Duarte Folgado
- **Invisible Citizens, Visible Futures: Rethinking Inclusivity in Urban Digital Twins**
  Delia Maria Coluccino, Beatrice Balzola, Simone Vagnoni, Lucas Ramon Ciutat and Andrea Filippo Ferraris
- **Subgroup Discovery Using Model Uncertainty: A Feasibility Study**
  Ana Pereira, Duarte Folgado, Marília Barandas, Carlos Soares and André Carreiro

11.00 – 12.00 HALL	**COFFEE BREAK**

12.00 – 13.00 C8 Green Amphitheatre	**KEYNOTE** CHAIR: Paulo Novais **MÁRIO FIGUEIREDO** **The why of AI: Causal Discovery from Observational Data**

13.00 – 14.30 RESTAURANT	**LUNCH**

14.30 – 16.00

NLP-TeMA-02
C8 FE Sala de Atos
CHAIR: Joaquim Silva

- **A quantitative evaluation of natural language retrieval methods for OpenAPI specifications**
  Shankar M. Palamootil and Jacomine Grobler
- **Authorship Verification of the Caesarian Corpus Using Siamese BERT**
  Brandon Li, David Nizovsky, Anna Leonenko, Tingying Zeng and Mikhail Shalaginov
- **CrioleSet: A New Corpus for Cape Verdean Creole, Towards Robust Machine Translation**
  Roberto Medina, Fernando Batista and Estanislau Lima
- **ExpliCIT-QA: Explainable Code-Based Image Table Question Answering**
  Maximiliano Hormazábal, Héctor Cerezo, Jorge Alcalde, Pedro Alonso and Álvaro Bueno

AmIA-01 + AIC
Amphitheatre C8.-1.8
CHAIRS: Pedro Martins

- **Lightweight Tree Ensembles with Optimized Features for Five-Class Sleep Apnea Stratification**
  Vasco Silva, Goreti Marreiros, and Luís Conceição
- **Framework for Adaptive and Creative Learning Based on Generative Artificial Intelligence in Higher Education**
  Juan M. Núñez V., Leonardo Saavedra Munar, Claudia L. Arias Sánchez, Valentina López Vargas, and Fernando De la Prieta
- **Enabling Context-Aware Sarcasm Detection in Ambient Intelligence through Local LLMs**
  Adelino Gala, Francisco Marcondes, Manuel Rodrigues, and Paulo Novais
- **Text Rewriting with Transformers for Humor Generation in Portuguese**
  André Moreira, Marcio Lima Inácio, and Hugo Gonçalo Oliveira

AITMA-04
Amphitheatre C8. -1.8.1
CHAIR: João Dias

- **Multi-Objective Reinforcement Learning Algorithm for Irregular Spatial Clusters Detection**
  Dênis Ricardo Xavier de Oliveira, Anderson Duarte, André Ottoni and Gladston Moreira
- **Exploring the Early Universe with Deep Learning**
  Emmanuel de Salis, Massimo De Santis, Davide Piras, Sambit K. Giri, Michele Bianco, Nicolas Cerardi, Philipp Denzel, Merve Selcuk-Simsek, Kelley M. Hess, M. Carmen Toribio, Franz Kirsten and Hatem Ghorbel
- **From Execution to Representation: Capturing Metaheuristic Behaviour via Graph-Derived Meta-Features**
  José Carlos Pacheco-Junior, Enrico Leal, Nicolly Cutrim, Guilherme Ribeiro, Bruno De Souza and Alexandre De Oliveira
- Improved Complex-Valued Kolmogorov-Arnold Networks with Theoretical Support
  Rui Che, Ludvig Af Klinteberg and Masood Aryapoor (No Show)

16.00 – 16.30 C8 HALL	**COFFEE BREAK**

16.30 – 18.00

AIPES + FDA2
C8 Green Amphitheatre
CHAIR: José Machado

- **Reinforcement Learning for Real-Time Price Prediction in Energy Systems**
  David Araújo, Gabriel Santos, Brígida Teixeira, Pedro Faria and Zita Vale

- **Optimizing Quay Crane Operations considering Energy Consumption**
  João Almeida, Adrian Carrillo-Galvez, John Peñaloza Morán, Tiago Soares and Zenaida Mourão

- **Dynamic Retraining Framework for Reliable Energy Forecasting in Smart Buildings**
  Letícia Gomes, Brígida Teixeira and Zita Vale

- **EvoNFuzz: A New Evolutionary Neuro-Fuzzy Network with Genetic Programming-based Learning**
  Glender Brás, Alisson Marques Da Silva and Elizabeth Wanner

AmIA-02 + AITMA-05
Amphitheatre C8. -1.8
CHAIR: Manuel Rodrigues

- **An Explainable Deep Learning Architecture for the Detection of Gastrointestinal Lesions in Colonoscopy images**
  Hugo Pereira, Diogo Martinho and Goreti Marreiros

- **Challenges of AI in healthcare projects**
  Liepa Bikulciene and Egle Butkeviciute

- **Thermal Impact on Vegetable Growth: Case Study in Lettuce Production**
  Juan M. Núñez V., Claudia Helena Ramírez-Soler, Sofania M. Rojas-Landacay, Sebastián López Flórez and Fernando De la Prieta

- **A New Proposal of Layer Insertion in Stacked Autoencoder Neural Networks**
  Francisco dos Santos Viana, Bianca Valéria Lopes Pereira, Moisés Santos, Carlos Soares and Areolino de Almeida Neto

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18.00 – 18.30
C8 Green Amphitheatre

CLOSING SESSION

José Valente de Oliveira (Local Organization)
João Leite (Organization)