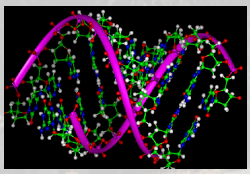
IEEE COMPUTER SOCIETY

Biological & Artificial Intelligence FOUNDATION

ICBIBE 2025

Agenda and Detailed Program



Day	Time	*S: Session, BI: BioInformatics, BM: BioMedical		
Day 1	08:00 - 08:30	**Welcome**		
	08:30 - 09:00	**ICBIBE-OPENING**		
	09:00– 10:00	**Keynote 1**		
	10:00– 12:00	**S1: (BI) Diseases and Drugs**	**S2: (BM) Bio-Med Imaging**	**S3: (BM) Bio-Sensing – Wearables**
	12:00– 13:30	**Break**		
	13:30– 15:30	**S4: (BI) Transcriptomics**	**S5: (BM) Bio-Med Imaging**	**S6: (BM) Biomed Sound Systems**
	15:30– 16:00	**Break**		
	16:00– 18:00	**S7: (BM) Biomed AI Methods**	**S8: (BM) Biomed Comput Models**	**S9: (BM) Healthcare Systems**
END OF DAY 1				
Day 2	09:00– 09:30	**Registration updates**		
	09:30– 11:30	**S10: (BI) Gene Sequencing**	**S11: (BM) Bio-Med Imaging**	**S12: (BM) Bio-Sensing – Wearables**
	11:30– 13:00	**Break**		
	13:00– 14:00	**Keynote 2**		
	14:00– 16:00	**S13: (BM) Cancer Imaging**	**S14: (BM) Rehab – Devices – Robotics**	**S15: (BM) Electrophysiology**
	16:00– 16:30	**Break**		
	16:30– 18:30	**S16: (BI) Genes – Proteins**	**S17: (BM) Biomed AI Methods**	**S18: (BM) Healthcare Systems**
	19:30 - 22:00	**GALA DINNER / AWARDS**		
END OF DAY 2				
Day 3	09:00 - 12:00	Tutorial 1		Tutorial 2
	12:00 - 13:30	**Break**		
	13:30 - 14:00	**ICBIBE-CLOSING REMARKS**		
END OF DAY 3				

Thursday 6th November 2025

08:00-8:30	**Welcome (Main Conference Lobby)**

08:30-09:00	**ICBIBE-OPENING** **(Main Hall)** Dr. Nikolaos Bourbakis (General Chair), Biological & AI Foundation OH, Purdue University IN USA, Technical University of Crete, Greece Dr. Nenad Filipovic (Co-General Chair), University of Kragujevac, Serbia Dr. Marios Antonakakis (Program Chair), Technical University of Crete, Greece Dr. Garrett Goodman (Co-Program Chair), Miami University, Ohio, USA

09:00-10:00	Keynote 1 AI in Medicine and Biology: Current Trends, Applications and Challenges **Professor George Matsopoulos,** NTUA, Athens, Greece *Chair: Prof. Bourbakis* **(Main Hall)**

Session S.1: 10:00-12:00, Room – 1

(BI) Diseases and Drug Delivery

Chairs: Panagiotis Symeonidis and Michalis Zervakis

S.1.1 **Recommending Safe and Effective Drug Combinations with Principal Component Analysis -** Panagiotis Symeonidis, Elias Kontos

S.1.2 **Subtyping Parkinson's Disease via Probabilistic Neuroimaging Data Clustering -** Christian Mattjie, Rafaela Ravazio, Joana Pasquali, Lucas S. Kupssinsku, Luis V. de Moura, Rodrigo C. Barros, Daniel Teixeira-dos-Santos, Gabriela M. Pereira, Artur Schuh, Alvaro O. Franco, Marco A. M. Schlindwein, Andrei Bieger, Marco Antonio de Bastiani, Eduardo Zimmer, Thomas H. Schlickmann, Lara A. Souza

*S: Session, BI: BioInformatics, BM: BioMedical

S.1.3	**Functional Enrichment of Lipidomics Data to Characterize the Metabolism of Diabetes Mellitus and Subclinical Carotid Atherosclerosis -** Maria Barranco-Altirriba, Josch K. Pauling, Didac Mauricio, Alexandre Perera-Lluna
S.1.4	**An Integrative Deep Learning Model for Drug-Target Interaction Prediction -** Francesco Foder, Salvatore Contino, Antonino Fiannaca, Alfonso Urso, Massimo La Rosa, Roberto Pirrone
S.1.5	**Uncovering Molecular Insights into Blood - Brain Barrier Dysfunction in Alzheimer's Disease -** Konstantinos Lazaros, Marios G. Krokidis, Gerasimos Grammenos, Styliani Adam, Themis P. Exarchos, Panagiotis Vlamos, Aristidis G. Vrahatis
S.1.6	**An in silico approach to study Tauopathies in Alzheimer's disease and modeling of neuroprotective compounds targeting Neurofibrillary tangles -** Vankudavath Rajunaik, Harikrishnan Narayanan Unni, Shyam Perugu, B Preethi, Devraj J Parasannanavar
S.1.7	**Heterogeneous Graph Transformer for Integrative Multi-Omics Disease Classification -** Farasat Veisi, Maryam Khaleghian

Session S.2: 10:00-12:00, Room – 2

(BM) Bio-Med Imaging

Chairs: Christakis Damianou, Nikolaos Bourbakis

S.2.1	**MRI compatible Focused ultrasound phantom for breast targets -** Christakis Damianou and Andria Filippou
S.2.2	**Atrous Spatial Pyramid Pooling based Lightweight TransUNet for Cardiac Image Segmentation -** Muniba Ashfaq, Zoran Bosnić
S.2.3	**Improving Right Ventricle Segmentation in Cardiac Magnetic Resonance Imaging Through Transfer Learning -** Abbas Rizvi, Sivalingam Ampatishan, Ramesh Mahdavifar, Liang Zhong, Michelle Noga, Kumaradevan Punithakumar
S.2.4	**VerSe Data Augmentation Enables per Vertebral Body Instance Segmentation in HSCT Patient Scans -** Lucas J. Powers, Reza Babaei, Elnaz Aghdaei, Joseph P. Havlicek, Samuel Cheng, Shangqing Zhao, Christopher G. Kanakry, Peter Choyke, Sara Vesely, Jennifer Holter Chakrabarty, Kirsten M. Williams
S.2.5	**High-Quality Analytic Isosurface Rendering for Web-Based Cardiac Imaging -** Vasileios Lazaros Charalampidis, M. Louis Handoko, Eduard Rodenas-Alesinao, Folkert W. Asselbergs, Konstantinos Votis, Paschalis Bizopoulos, Andreas Triantafyllidis
S.2.6	**Meta-Imputation Balanced (MIB): An Ensemble Approach for Handling Missing Data in Biomedical Machine Learning -** Fatemeh Azad, Zoran Bosnic, Matjaz Kukar
S.2.7	**Distributed Deep Learning for Medical Image Denoising with Data Obfuscation -** Sulaimon Oyeniyi Adebayo, Ayaz H. Khan

*S: Session, BI: BioInformatics, BM: BioMedical

Session S.3: 10:00-12:00, Room – 3

(BM) Bio-Sensing - Wearables

Chairs: Vangelis Sakkalis, Marios Antonakakis

S.3.1	**Eye-Tracking Driven Dyslexia Detection: A Data-Efficient Approach Using Synthetic Augmentation and XGBoost Classifier -** Rachana Ramchandar, Samyuktha S, Shreya Mittal, S Adarsh Nayak, Harshitha Pakati V, Mamatha H R
S.3.2	**Bio-Sensing Approach to Anomaly Detection in Hiking via Statistical Modeling of Motion-Based Exertion Patterns -** Tajim Md. Niamat Ullah Akhund, Yojiro Mori
S.3.3	**End-to-End Wrist PPG Generation Using Radial Artery Hemodynamics and Light Transport Simulation -** Supun Kuruppu, Biyon Fernando, Dakshina Tharindu, Dumindu Bandara, Ajith Pasqual
S.3.4	**Synchronization of Wearable Sensor Data for Vital Sign Monitoring -** Joshua C Y Lai, Pushpendu Kar
S.3.5	**Breathing to Sleep: Predicting Sleep Quality in COPD Patients with Respiratory Signals Derived from the Chest-Wearable Respeck -** D.K. Arvind, Passara Chanchotisatien, Jack Taylor, Isabel Martinez-Barona Garcia
S.3.6	**Obstructive Sleep Apnea Classification Using an Ultra-lightweight Knowledge Distillation Boosted Network Augmentation Model -** Duan-Yu Chen, Zhang Xiao, Tsung-Wei Huang
S.3.7	**PPG-based Respiration Rate Estimation with Beat Detection and Method Fusion -** Chryssalenia Koumpouzi, Matthew Pediaditis, Vangelis Sakkalis

12:00-13:30	Break

Session S.4: 13:30-15:30, Room – 1

(BI) Transcriptomics

Chairs: Bourbakis Nikolaos, Carlos Ortiz-de-Solórzano

S.4.1	**Consensus-Based Identification of Schizophrenia Risk Genes Using Masked Denoising Autoencoders and Explainable Machine Learning -** Costas Bampos, Vasileios Megalooikonomou
S.4.2	**A Foundation Model for Single-Cell Transcriptomics in Alzheimer's Disease -** Athanasios Balomenos, Christos Petrou, Theodoros Siozos, Ioannis Charalampopoulos, Calogeropoulou Theodora, Yannis Kopsinis
S.4.3	**Deep Learning Models that Integrate Transcriptomic and Spatial Information, allow efficient Reconstruction and Clonal TCR analysis of the Tumor Microenvironment -** Pedro Castillo-Rosique, Iván Cortés-Domíguez, Enric Vercher, Sandra Hervás, Angel M. Mártinez, Carlos Ortiz-de-Solórzano

*S: Session, BI: BioInformatics, BM: BioMedical

S.4.4	**Molecular dynamics simulation of TRPV1-mediated nanoparticle transport across normal and cancer cell membrane models -** Athul Vidya Rajeev, Varad Ashishrao Talnikar, Harikrishnan N Unni
S.4.5	**RNA Sequencing-Based Antisense Oligonucleotide Drug Modeling for Personalized Lung Cancer Therapy and Tumorigenic Inhibition -** Raghav Thallapragada, Anuj Chaudhri
S.4.6	**MYCN-Amplified Neuroblastoma Detection - Radiomics Vs. Trainable Features -** Mafalda Malafaia, Francisco Silva, Diogo Costa Carvalho, Ricardo Martins, Silvia Costa Dias, Helena Torrao
S.4.7	**Softmax-Weighted Pseudo-Label Refinement for Enhancing Robustness against Label Noise -** Gouranga Bala, Anuj Gupta, Amit Sethi

Session S.5: 13:30-15:30, Room – 2

(BM) Bio-Med Imaging

Chairs: Michalis Zervakis, Helder P. Oliveira

S.5.1	**Assisted Vascular Analysis (AVA) for Deep Inferior Epigastric Perforators: Pipeline Analysis -** Ricardo Ferreira, Joao Silvã, Miguel Romariz, David Pinto, Ricardo J. Araujo, Joao Santinha, Pedro Gouveia, Helder P. Oliveira
S.5.2	**Classifying Pre-Malignant Colon Polyps Using Hybrid Deep Learning on Ex Vivo Optical Coherence Tomography Images -** Christos Photiou, Andrew Thrapp, Guillermo Tearney, Costas Pitris
S.5.3	**Characterizing Temperature-Related Risks in Patients with Chronic Conditions in the Vallès Occidental, Spain -** Blanca Alaejos Pardo, Alexandre Perera Lluna, Jordi Fonollosa
S.5.4	**Incrementally Learning to Segment the Lungs: Similarities and Differences Across Institutions -** Joana Vale Sousa, Helder P. Oliveira, Tania Pereira
S.5.5	**Deep Learning Based Detection of Neck Lymph Nodes and Clinical Palpation Assessment -** Amel OURAHMOUNE, Massinissa FAZEZ, Abderahmane TAMAZOUZT, Yasmine ABOURA, Meriem LATIF
S.5.6	**Multimodal Bronchoscopic Video Analysis System for Early Lung Cancer Detection -** Qi Chang, Vahid Daneshpajooh, Danish Ahmad, Jennifer Toth, Rebecca Bascom, William E. Higgins
S.5.7	**A Mixed Deep Neural Network for sMRI and fMR Features Fusion in AD Detection -** Yanteng Zhang, Songheng Li, Anees Abrol, Yuxiang Wei, Qiang Liu and Vince Calhoun

Session S.6: 13:30-15:30, Room – 3

(BM) Biomed Sound Systems

Chairs: Zoran Bosnić, Garrett Goodman

S.6.1	**Left Ventricular Motion Integration in Computed Tomography based on 3D Echocardiography for the MATRIX-VT Study -** Christian Janorschke, Sorin S. Popescu, Hannes Alessandrini, Christoph Marquetand, Jingyang Xie, Xinyu Lu
S.6.2	**Deployable Ultrasound Segmentation via Deformable Attention-Enhanced UNet -** Adnan Munir, Shujaat Khan
S.6.3	**Fairness-Aware Deep Learning Model for COVID-19 Detection from Cough Audio Recordings -** Dimitra Kostavasili, Theofanis Ganitidis, Konstantina S. Nikita, Maria Athanasiou
S.6.4	**Evolutionary Features Selection and Task Level Fusion for Voice based Heart Failure Prediction -** Muniba Ashfaq, Zoran Bosnić
S.6.5	**Comparative assessment of uncertainty-aware deep learning methods for atherosclerosis risk stratification from carotid ultrasound imaging -** Kalliopi Sarafi, Theofanis Ganitidis, Konstantina S. Nikita, Maria Athanasiou
S.6.6	**Comparing Speech Embeddings and Acoustic Features for Unsupervised Subtyping of Parkinson's Disease -** Jerusa D. Finatto, Rafaela C. Ravazio, Christian Mattjie, Rodrigo C. Barros, Artur Schuh, Vanessa B. dos Santos, Maira R. Olchik, Lucas S. Kupssinsku
S.6.7	**Denoising and classification of heart sounds for mortality prediction in ICU COVID-19 patients -** Stavros Karampatzakis, Georgios Petmezas, Vasileios E. Papageorgiou, Nicos Maglaveras

15:30-16:00	Break

Session S.7: 16:00-18:00, Room – 1

(BM) Biomed AI Methods

Chairs: Nikolaos Bourbakis, Vangelis Sakkalis

S.7.1	**Exploring Demographic Importance for Hypoglycemia Classification Leveraging a Large CGM Dataset -** Beyza Cinar, and Maria Maleshkova
S.7.2	**CHYMERA: AI-powered System for Automated and Explainable Quality Assessment of Chest Radiographs -** Lucia Borrego Escobar, Christian Mata, Inés Del Val, Daniel Caballero, Lydia Canales and Josep Munuera
S.7.3	**Skin Lesion Prioritization: how AI systems fail when tested using real-scenario databases -** Paula Vazquez, Iván Matas, Carmen Serrano, Lara Ferrándiz, David Moreno, Amalia Serrano, Teresa Ojeda and Begoña Acha
S.7.4	**A Deep-Learning Approach Based on Graph Network Model for Recognizing Receptor-Odor Interaction and Perception -** Fei Wang, Junfei Liu, Yunwei Xiong, Huihao Wang, Zihao Liu, Xiaoya Xie and Xing Chen
S.7.5	**A Graph-based Approach for Early and Explainable Health Risk Assessment -** Sonal Jha, Wu-Chun Feng

Session S.8: 16:00-18:00, Room – 2

(BM) Biomed Comput Models

Chairs: Milos Kojic, Marios Antonakakis

S.8.1 **Analytical Solution for Electric Potential in a Homogeneous Anisotropic Spherical Head Model with Directional Conductivity -** Konstantina Bampali, Maria Hadjinicolaou and Gregory Kamvyssas

S.8.2 **The Role of Platelet Activation and Cell Stiffness in CTC Arrest: A Finite Element Study -** Vladimir Simic, Aleksandar Nikolic, Miljan Milosevic, Shao Ning, Fransisca Leonard, Milos Kojic

S.8.3 **Modeling the Human Temporomandibular Joint: An Extensive Review of Finite Element Approaches and Biomechanical Insights -** Aikaterini M. Koliousi, Maria Oikonomou and Athanassios Mihailidis

S.8.4 **Delaunay Triangulations: a New Avenue for Classification of Biomedical Images using Graph Neural Networks -** Mustafa Mohammadi, Luis Rueda

S.8.5 **Enriching Patient Encoding with Spatial Statistics in Computetional Pathology -** Noémie Rabilloud, Oscar Acosta, Solène-Florence Kammerer-Jacquet and Thierry Pécot

S.8.6 **Computational Modeling of Translational Acceleration-Induced Diffuse Injury: The Role of Brain Inhomogeneity -** Tanu Khanuja and Harikrishnan Narayanan Unni

Session S.9: 16:00-18:00, Room – 3

(BM) Healthcare Systems

Chairs: Alkinoos Athanasiou, Konstantina Nikita

S.9.1 **Single-view Cotraining and Active Learning for Concurrent Medical Activity Labeling -** Aydin Saribudak, Aaron H. Mun and Ivan Marsic

S.9.2 **Greek-HemaRAG: A Retrieval-Augmented Generation System for Hematologic Malignancies in the Greek Language -** Maria Chatzimina, Manolis Tsiknakis

S.9.3 **Assist-as-needed control for FES in foot drop management -** Andreas Christou, Elliot Lister, Georgia Andreopoulou, Don Mahad and Sethu Vijayakumar

S.9.4 **DiaShift: An Explainable System for Temporal Diagnostic Shift Detection in Clinical Notes -** Juli Bakagianni, Kalliopi V. Dalakleidi, Konstantinos Stamatis and John Pavlopoulos

S.9.5 **Gut Microbial Signatures for Early Screening of Autism Spectrum Disorder: An Interpretable Machine Learning Approach -** Glykeria Theodorou, Aris Markogiannakis, Maria Athanasiou, Konstantinos Mitsis and Konstantina Nikita

S.9.6	**Validating the Greek Translation of the Godspeed Robotics Questionnaire by Interactive Workshop -** Vasiliki Mantiou, Vasiliki Fiska, Konstantinos Mitsopoulos, Kostas Nizamis, Markos G. Tsipouras, Spiros Nikolopoulos, Panagiotis Polygerinos, Eleftheria Vellidou, Konstantinos Papadopoulos, Panagiotis Bamidis, Alexander Astaras and Alkinoos Athanasiou

Friday 7th November 2025

9:00-9:30	**Registration updates (Main Conference Lobby)**

Session S.10: 9:30-11:30, Room – 1

(BI) Gene Sequencing

Chairs: Nikolaos Alachiotis, Bourbakis Nikolaos

S.10.1	**Accelerating Multiple Sequence Alignment via Maximal Exact Match Identification -** Tim Wehning, Nikolaos Alachiotis
S.10.2	**Scalable Multiple Sequence Alignment via Genetic Algorithms and localized Deep Reinforcement Learning Agents -** Rocco Zaccagnino, Andrea Aceto, Gerardo Benevento, Gerardo Frino, Nicola Frugieri, Delfina Malandrino, Alessia Ture and Gianluca Zaccagnino
S.10.3	**Sequence-to-Temperature: RAG-Enhanced and XAI-Supported OGT Estimation from Archaea tRNA Sequences Using Transformer-Based Embeddings -** Ahmet Telceken, Eyup Cinar
S.10.4	**GeneticPieces2vec: Deep learning method for DNA sequence representation -** Juan Sebastian Malagón Torres, Sebastian Ariza Parra, David Octavio Botero-Rozo and Ivan Mauricio Ayala Diaz
S.10.5	**Retrieving Relevant Single-Cell RNA Sequencing Profiles with Gene Expression Clustering -** Arina Surko and Hasan Oğul
S.10.6	**Cross cohort integration of whole blood RNA-Seq samples: Normalization units comparison and stable housekeeping gene selection -** Pol Ezquerra-Condeminas, Alexandre Perera-Lluna and José Manuel Soria

Session S.11: 09:30-11:30, Room – 2

(BM) Bio-Med Imaging

Chairs: Michail Alexiou, Konstantinos Politof

S.11.1	**Benchmarking Radiomics-Based Machine Learning Pipelines for Clinically Significant Prostate Cancer Detection -** Dimitrios Samaras, Georgios Agrotis, Maria Vakalopoulou, Aikaterini Vassiou, Marianna Vlychou and Ioannis Tsougos
S.11.2	**Color Space Channel Evaluation for CLAHE-Enhanced Retinal Vessel Segmentation with Attention U-Net -** Patrycja Kwiek and Małgorzata Jakubowska

S.11.3	**Landmark-constrained Multi-object Model Fitting. An Application for 3D Reconstruction of X-Ray Images of the Human Foot -** Catherine Namayega, Lindie Du Plessis, Tinashe Mutsvangwa, Bhushan Borotikar and Bernhard Egger
S.11.4	**Leveraging Unlabeled Scans for NCCT Image Segmentation in Early Stroke Diagnosis: A Semi-Supervised GAN Approach -** Maria Thoma, Michalis Savelonas, Dimitris Iakovidis
S.11.5	**Severity Classification of Brain Lesions using Joint Movement Patterns in Upper Limb Exercises -** Junjae Lee, Jihun Kim, Jaehyo Kim
S.11.6	**Brain Tumor Classifiers Under Attack: Robustness of ResNet Variants Against Transferable FGSM and PGD Attacks -** Ryan Deem, Garrett Goodman, Waqas Majeed, Md Abdullah Al Hafiz Khan and Michail Alexiou

Session S.12: 09:30-11:30, Room – 3

(BM) Bio-Sensing - Wearables

Chairs: Marios Antonakakis, Nenad Filipović

S.12.1	**A Multistage Signal Quality Framework for Blood Pressure Monitoring Using Photoplethysmography -** Joshua Lai and Pushpendu Kar
S.12.2	**Personalized Threshold-Based HRV Stress Detection from PPG Data: Preliminary Evaluation with a Biofeedback Serious Game -** Stylianos M. Papelis, Nikolaos Bothos-Vouterakos, Konstantinos Mitsis, Aikaterini Fragkou, Glykeria Theodorou, Eleftherios Kalafatis, Theofanis Ganitidis and Konstantina S. Nikita
S.12.3	**FRAM-SHAP: Framework for Combined Evaluation Metrics through SHAP Analysis -** Vaibhav Gupta, Florian Grensing, Louisa van den Boom and Maria Maleshkova
S.12.4	**Evaluation of Medical Biomarkers in Machine Learning Models for Classification of Heart Failure with Preserved and Reduced Ejection Fraction -** Lazar Dašić, Tijana Geroski, Ognjen Pavić, Anđela Blagojević, Bojana Bajić, Ilija Kamenko and Nenad Filipović
S.12.5	**A Multidimensional Framework for Data Quality Assessment in Heart Failure: Integrating IEEE 2801-2022 and Fairness Metrics -** Marina Georgoula, Grigorios Kotoulas, Konstantina-Helen Tsarapatsani, Dimitrios Boucharas, Ioannis Kyprakis, Dimitrios Manousos, Andrej Preveden, Lazar Velicki, Amy Groenewegen, Frans Rutten, Borut Flis, Matej Pičulin, Petar Vračar, Zoran Bosnić, Maria Tafelmeier, Lars Maier, Fausto Barlocco, Iacopo Olivotto, Marta Jimenez Blanco, Jose Luis Zamorano, Duncan Edwards, Prithwish Banerjee, Nduka Okwose, Sarah Charman, Djordje Jakovljevic, Manolis Tsiknakis and Dimitrios Fotiadis
S.12.6	**Multi-Purpose 3-Channel ECG and SCG Portable Sensory Device for Cardiac Diagnostics and Monitoring -** Nemanja Marković, Emil Jovanov, Tijana Geroski and Neand Filipović
S.12.7	**Optimal Threshold Singular Spectrum Analysis for Efficient Electrocardiogram Interference Removal -** Muzammmil Saeed, Stephen R. Alty and Clive Cheong Took

11:30-13:00	Lunch Break

13:00-14:00	**Keynote 2** Advancing Health AI with Real-World Relevance Professor Konstantina Nikita, National Technical University of Athens, GR Chair: *Prof. Bourbakis* **(Main Hall)**

Session S.13: 14:00-16:00, Room – 1

(BM) Cancer Imaging

Chairs: Dimitrios I. Fotiadis, Michalis Zervakis

S.13.1	**Predicting Muscle Invasive Bladder Cancer from Multi-Parametric MRI Radiomic Features -** Mutlu Mete, Ira Harmon, Mohammed Al-Toubat, Dheeraj Gopireddy, Mark Bandyk and Kazim Gumus
S.13.2	**Deep Learning for Lung Cancer Detection in Chest Radiographs: Evaluating YOLOv8 in Clinical Practice -** Seifaldien Mohamed, Patricia Anelis Donisan, Cristian Stefan, Dan Garlasu, Ioan-Alexandru Bratosin, Diana-Alexandra Ciungan, Stefan Dumitrache-Rujinski, Alexandra Pop, Filip Radu and Maria-Iuliana Dascalu
S.13.3	**Breast Cancer Sub-typing using Digital Mammograms and Machine Learning: Predicting Invasiveness and Tumor Grade -** Kosmia Loizidou, Eleni Orphanidou Vlachou, Anneza Yiallourou, Christos Nikolaou and Costas Pitris
S.13.4	**Radiomics-Based Characterization of Hematologic Toxicity in Lung-Cancer Radiotherapy -** Guillermo Canterla, Begoña Acha, Manuel Borrego, José Luis López and Carmen Serrano
S.13.5	**Development of an Interpretable and Uncertainty-Aware Deep Learning Model for Gastric Cancer Histopathological Image Classification -** Aikaterini Martakou Galiatsatou, Maria Athanasiou and Konstantina Nikita
S.13.6	**Early Breast Cancer Risk Prediction and Breast Density Estimation Using Machine Learning -** Ansah Siddiqui, Emaan Shahzad, Muhammed Noshin, Maheen Ghani, Salam Dhou and Sameer Alawnah
S.13.7	**A Machine Learning Framework for Personalized Lifestyle Recommendations in Colorectal Cancer Prevention -** Christos Androutsos, Traianos Tsiokris, Zheshen Jiang, Nicolas Gillain, Ioannis S. Papanikolaou, Eleni Koukoulioti, Constantina Cloconi, Antria Savva, Sisse H. Njor, Susanne F. Jørgensen, Maja Ravnik, Sergej Černčič, María González Oter, Raquel Alcaraz Ortega, Vasilis Giannakopoulos, Dimitrios Kypreos, Dimitrios Dimitroulopoulos, George K. Matsopoulos and Dimitrios I. Fotiadis
S.13.8	**LungCLR: A Two-Stage Framework with Contrastive Pretraining for Low-Data Lung Cancer Histopathology classification -** Keshav Trivedi, Himanshu Kumar Pathak, Ishaan Pathak, Koushlendra Kumar Singh, Marios Antonakakis and Michalis Zervakis

S.13.9	**Fusion Strategies for Breast Cancer Characterization Using Traditional and Deep Learning Models -** Pedro Vitor Lima, Jaime S. Cardoso and Hélder P. Oliveira

Session S.14: 14:00-16:00, Room – 2

(BM) Rehab - Devices - Robotics

Chairs: Minas Liarokapis, Garrett Goodman

S.14.1	**Hand Gesture Recognition using YOLOv5 for People with Disability -** Corina Neacsu, Dana Georgiana Toma, Alexandru-Filip Popovici, Ramona Popovici, Ruxandra Popa, Bianca Ebrasu, Brindusa Trufan and Diana Scurtu
S.14.2	**Multi-Class Dementia Classification Based on Gait Analysis and Machine Learning -** Mustafa Al-Hammadi, Hasan Fleyeh and Ilias Thomas
S.14.3	**On Semi-Autonomous, Intuitive, Lightmyography Based Control of Humanlike Robotic and Prosthetic Hands Utilizing Video and IMU Data -** Bonnie Guan, Masahiro Kobayashi, Ricardo Vilela de Godoy, Mahonri Owen and Minas Liarokapis
S.14.4	**Assistive Bioacoustic System for Real-Time Interpretation of Dog Vocalizations to Support People with Disabilities -** Corina Neacsu, Haleema Ushaq, Toma Daria-Maria, Ramona Popa, Alexandra Ciungan, Bobirică George-Emil, Nicolae Goga, Iuliana Marin and Diana Scurtu
S.14.5	**An Open-Source, Biomimetic, Anthropomorphic Robotic and Prosthetic Hand Testbed for the Execution of Dexterous Manipulation Tasks -** Masahiro Kobayashi, Mahonri Owen and Minas Liarokapis
S.14.6	**Finger Dimensions and Their Association with Stature: A Machine Learning-Based Anthropometric Study -** Lais Azevedo Soares and Ana Estela Antunes Da Silva
S.14.7	**Low-Cost Markerless Gait Analysis Using a Minimal Human Model -** Konstantina Tsintzira, Aikaterini Smyrli, Athanasios Mastrogeorgiou and Evangelos Papadopoulos
S.14.8	**Optimizing UAV Station Placement for Pharmaceutical Transfers Between Hospitals** Anastasios Biblias, Emmanouil Rigas, Antonios Billis and Panagiotis Bamidis
S.14.9	**Augmented Reality in Liver Surgery: Technological Advances and Challenges -** Oussama Abdelhadi Bouabache, Amel Ourahmoune and Faiza Khellaf
S.14.10	**Longitudinal Skin Lesion Tracking for Total Body Photography -** Arda Bayram, Sinan Kockara

Session S.15: 14:00-16:00, Room – 3

(BM) Electrophysiology

Chairs: Maria Papadopouli, Marios Antonakakis

S.15.1	**Human Emotion Detection Using EEG Signals: Insights into Feature Selection -** Yeva Yesypenko, Muhammad Awais

S.15.2	**Neuro-inspired Ensemble-to-Ensemble Communication Primitives for Sparse and Efficient ANNs -** Orestis Konstantaropoulos, Stelios Smirnakis and Maria Papadopouli
S.15.3	**On Temporal Robustness & Brain-State Stability of Functional Connectivity in Mouse Primary Visual Area V1 compared to Higher Visual Area AL -** Mario Alexios Savaglio, Christina Brozi, Stelios M. Smirnakis and Maria Papadopouli
S.15.4	**Disentangling Stimulus & Population Dynamics in Mouse V1: Orthogonal Subspace Decomposition for Neural Representation -** Nikolaos Tzanakis, Alexandros Barmperis, Mario Alexios Savaglio, Ioanna Chourdaki, Stelios Manolis Smirnakis and Maria Papadopouli
S.15.5	**NeuroXAI: Explainable Deep Learning for EEG-Based Detection of Alzheimer's and Parkinson's Diseases -** Chayut Bunterngchit, Laith H. Baniata and Abdur Rasool
S.15.6	**Emotional State Alterations in Immersive Projection Environments: An EEG Study -** Christina Chatzianagnostou, Alexandra Tsipourakis, Klea Biniakou, Carlos Gomez Peña, Jesus Poza Crespo, Konstantinos-Alketas Oungrinis, Michail Zervakis and Marios Antonakakis
S.15.7	**Optimal Set of Time-Domain Features of EEG Signal Predicts Outcomes of Depression Therapy -** Mutlu Mete, Hesam Akbari and Nurcan Yuruk
S.15.8	**Decoding EEG Signals to Predict SSRI Therapy Success in Depression Using Automated Tunable Q-factor Wavelet Transform and Centered Correntropy -** Mutlu Mete, Hesam Akbari and Ram Bilas Pachori

16:00-16:30	Break

Session S.16: 16:30-18:30, Room – 1

(BI) Genes - Proteins

Chairs: Aristotelis Chatziioannou

S.16.1	**A Comparative Study of Protein Structure Prediction Models and Tools -** Ioan Sima
S.16.2	**Positional frequency chaos game representation for machine learning-based classification of crop lncRNAs -** Athanasios Papastathopoulos-Katsaros and Zhandong Liu
S.16.3	**VarOmeter: A Platform for Deep Functional Annotation and Intelligent Network Mining of Genome-Wide Variation Data -** Eleftherios Pilalis, Dimitrios Zisis, Christina Andrinopoulou and Aristotelis Chatziioannou
S.16.4	**Large Language Models for Genomic Sequence Understanding: Classifying Introns - Exons and Translating DNA to Protein -** Gustavo Cruz and Aurora Pozo
S.16.5	**Blood-Based Minimal Gene Panel for Granulocytic Phenotyping in COPD Using Contrastive Graph Learning and Gradient Boosted Classification -** Aadit Shrivastava, Aadit Shrivastava and Aadit Shrivastava

S.16.6	**Cross-Modal Deep Learning Integrating Histopathology and Genomics for Cancer Prognosis -** Maryam Khaleghian and Farasat Veisi

Session S.17: 16:30-18:30, Room – 2

(BM) Biomed AI Methods

Chairs: Kalliopi V. Dalakleidi, Nenad Filipović

S.17.1	**From Falls to Confidence: Assessing Olympus' Impact and Predictive AI Models on Fear of Falling -** Dimitrios Boucharas, Grigorios Kotoulas, Christos Nikitas, Stavroula Tassi, Efterpi Karapintzou, Athanasios Pardalis, Konstantinos Maglaras, Vassilis Tsakanikas, Eleftheria Iliadou, Michael Tsoukatos, Sofia Papadopoulou, Anastasios Rentoumis, Ioannis Arkoumanis, Ioannis Fostiropoulos and Dimitrios Fotiadis
S.17.2	**From Pen to Prediction: Handwriting-Based Alzheimer's Detection -** Maria Boumpi, Kalliopi V. Dalakleidi and John Pavlopoulos
S.17.3	**VirusT5: Harnessing Large Language Models to Predicting SARS-CoV-2 Evolution -** Vishwajeet Marathe, Deewan Bajracharya and Changhui Yan
S.17.4	**Interactive Explanation Spaces for Understanding AI Predictions in Cardiovascular Disease Risk -** Chara Skouteli, Nicoletta Prentzas, Antonis Kakas and Constantinos Pattichis
S.17.5	**Multi-Stage Classification Approach for Heart Failure Disease Diagnosis and Reduced Ejection Fraction Prediction -** Ognjen Pavić, Lazar Dašić, Anđela Blagojević, Tijana Geroski and Nenad Filipović
S.17.6	**SwarmICB: A Multi-Agent AI System for Immune Checkpoint Blockage Literature Mining and Research Synthesis and Analysis -** Chrysoula Bourtzinakou, Marios Krokidis, Themis Exarchos, Panagiotis Vlamos and Aristidis Vrahatis

Session S.18: 16:30-18:30, Room – 3

(BM) Healthcare Systems

Chairs: George A. Tsihrintzis, Christos Frantzidis

S.18.1	**Automated Glaucoma Report Generation via Dual-Attention Semantic Parallel-LSTM and Multimodal Clinical Data Integration -** Cheng Huang, Weizheng Xie, Zeyu Han, Tsengdar Lee, Karanjit Kooner, Jui-Kai Wang, Ning Zhang and Jia Zhang
S.18.2	**Multimodal Carotid Risk Stratification with Large Vision-Language Models: Benchmarking, Fine-Tuning, and Clinical Insights -** Daphne Tsolissou, Theofanis Ganitidis, Konstantinos Mitsis, Stergios Christodoulidis, Maria Vakalopoulou and Konstantina Nikita
S.18.3	**MemoryBERT: A Systematic Framework for Memory Identification -** Dimitrios Panagoulias, Persephone Papatheodosiou, Anastasios Mponakis, Dimitris Dikeos, Maria Virvou and George A. Tsihrintzis

S.18.4	**SYMPTOM: SYMptom-level Prediction of Target Outcomes in MDD using Transformers on Mental health narratives -** Christos Frantzidis, Aikaterini Stravoravdi, Aristea Ladas and Georgios Papazisis
S.18.5	**Automated Glaucoma Classification in Fundus Images Using Multi-Backbone Feature Fusion -** Juhee Han, Soo Min Oh, Hee Jo, Bengie Ortiz, Yifan Li and Jo Woon Chong
S.18.6	**Technoeconomical Benefits in the Use of ERT Models for Fish Shape Alignment -** Panagiota Germanou, Ioannis Betounis, Panagiotis Christakos, Nikos Petrelis, Christos Antonopoulos and Nikolaos Voros

19:30 - 21:00	GALA DINNER Recognition AWARDS BEST PAPERS

Saturday 8th November 2025

09:00 - 12:00	Tutorial 1, Room – 1 A View on some AI Methods and Applications Organizers: Prof. Bourbakis Tutorial 2, Room – 2 Non-invasive and individual diagnosis of brain and heart disorders Organizers: Ass. Prof. Antonakakis

12:00 - 13:30	Break

13:30 - 14:00	**ICBIBE-CLOSING REMARKS** **(Main Hall)** Dr. Nikolaos Bourbakis (General Chair), Biological & AI Foundation OH, Purdue University IN USA, Technical University of Crete, Greece Dr. Nenad Filipovic (Co-General Chair), University of Kragujevac, Serbia Dr. Marios Antonakakis (Program Chair), Technical University of Crete, Greece Dr. Garrett Goodman (Co-Program Chair), Miami University, Ohio, USA

*S: Session, BI: BioInformatics, BM: BioMedical