



4th ISAIMS 2023

2023 4th International Symposium on
Artificial Intelligence for Medical Sciences

2023年第四届医学人工智能国际学术会议

会议手册

CONFERENCE MANUAL

主办单位：荷兰阿姆斯特丹自由大学

协办单位：首都医科大学 | 河南中医药大学 | 上海中医药大学 | JAIMS期刊编辑部
河南省中西医结合学会肿瘤专委会 | 中国抗癌协会中西整合食管癌专委会
郑州大学附属肿瘤医院 | AEIC学术交流中心

支持单位：北京智通智慧科技有限公司 | 好心情智慧医疗

2023年10月27日-29日 中国成都 | October 27-29, 2023 Chengdu, China

Conference Introduction

Artificial intelligence has unimaginable potential. Within the next couple of years, it will revolutionize every area of our life. The technology also started to transform medicine with great vigor. In the last couple of years, the number of AI-related studies, research projects, university courses, and companies has grown exponentially, not to speak about the rapid improvement in the precision of the technology. Artificial intelligence-powered medical technologies are rapidly evolving into applicable solutions for clinical practice. 2023 4th International Symposium on Artificial Intelligence for Medical Sciences (ISAIMS 2023) will be held during October 27-29, 2023 in Chengdu, China. ISAIMS is an annual conference that has been held successfully for three years and attracted more than 500 scholars and experts. ISAIMS 2023 is a hybrid conference combining both in-person and virtual experiences. ISAIMS 2023 mainly covers topics on Frontier technologies of AI, biometrics, intelligent medical robots, intelligent image recognition, intelligent diagnosis and treatment, medical artificial intelligence in the post-epidemic era, etc.

ISAIMS 2023 welcomes all high-quality research papers and presentations from related research fields. The conference will invite distinguished speakers to deliver keynote speeches and invited talks. The idea of the conference is for scientists, scholars, engineers, and students from all over the world to present ongoing research activities, and hence strengthen existing partnerships and foster new collaborations.

第四届医学人工智能国际学术会议 (ISAIMS2023) 将于 2023 年 10 月 27-29 日召开。会议自 2020 年至今已经成功举办三届, 吸引了来自海内外相关领域学者 500 余名。本届会议将继续围绕人工智能在医学领域的最新研究成果, 为来自国内外高等院校、科学研究所、企事业单位的专家、教授、学者、工程师等提供一个分享专业经验, 扩大专业网络, 面对面交流新思想以及展示研究成果的国际平台, 探讨本领域发展所面临的关键性挑战问题和研究方向, 以期推动该领域理论、技术在高校和企业的发展和应, 也为参会者建立业务或研究上的联系以及寻找未来事业上的全球合作伙伴。

Organization

Organizer



荷兰阿姆斯特丹自由大学

Co-organizers

首都医科大学、河南中医药大学、上海中医药大学、
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中国抗癌协会中西整合食管癌专委会、郑州大学附属肿瘤医院、AEIC 学术交流中心

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EiC of Journal of Artificial Intelligence for Medical Sciences

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Conference Agenda

2023年10月27日/27th October, 2023	
13:00 - 17:00	Registration(报到注册) 1 st Floor, Atour Hotel (Chengdu Taikoo Li)
2023年10月28日/28th October, 2023	
Keynote Speeches Jinxiu Hall(锦绣厅), 1 st Floor ZOOM conference ID: 830 8729 4989 Password: 242689	
Session Chair: TBD (09:00-12:00)	
09:00 - 09:10	Opening Address Prof. Zhisheng Huang, Free University (VU), Amsterdam, The Netherlands
嘉宾报告 / Keynote speeches	
09:10 - 09:55	Speech Title: Artificial Intelligence in Bioimage Analysis Prof. Erik Meijering, University of New South Wales, Australia
09:55 - 10:40	Speech Title: Medical Image Processing Methods and Clinical Applications Prof. Yao Lu, Sun Yat-sen University, China
10:40 - 11:00	Photography & Tea Break
11:00 - 11:45	Speech Title: TBD Prof. Shaofu Lin, Beijing University of Technology, China
12:00 - 14:00	Lunch
14:00 - 14:45	Speech Title: TBD Prof. Pier Paolo Piccaluga, School of Medicine, Bologna University, Italy
Oral Session I (14:45-) Jinxiu Hall(锦绣厅), 1 st Floor	
14:45 - 15:00	Oral 1-1: Analysis of the mechanism of antipsychotics induced abnormal ECG using Medical Ontologies and Medical Knowledge Graphs Hongyun Qin 秦虹云, Tongji University School of Medicine, China
15:00 - 15:15	Oral 1-2: Study on Rules of Medication in Breast Cancer Based on Literature Information Extraction Kehan Zhen 镇可涵, Hubei University of Chinese Medicine, China
15:15 - 15:30	Oral 1-3: Research on Intelligent Protection Technology for Dental Clinic Environment Fan Zhang 张帆, Guizhou University, China

15: 30 - 15: 45	<p>Oral 1-4: Association between metabolic syndrome (MetS) and depression among community-dwelling super-old adults: results from the China Health and Retirement Longitudinal Study</p> <p>Dandan Chen 陈丹丹, Fuzhou Medical College of Nanchang University, China</p>
15: 00 - 15: 15	<p>Oral 1-5: RADNet: Residual Attention-based Dynamic Weights Network for Microaneurysm Detection in Fundus Images</p> <p>Yilin Han 韩依林, Tianjin University of Technology, China</p>
	Keep Updating
Oral Session II (Online) (14:00-)	
14: 00 - 14: 15	<p>Oral 2-1: Screening of psoriasis core genes and biofunctional analysis based on bioinformatic analysis</p> <p>Xiaoyuan He 何晓园, Changzhi Medical College, China</p>
14: 15 - 14: 30	<p>Oral 2-2: Classification of Red Blood Cell Aggregation Based on Statistical Features of Ultrasonic Radiofrequency Echo Signals and Subspace K-nearest Neighbor Classifier</p> <p>Hong Tang 唐红, Yunnan University, China</p>
14: 30 - 14: 45	<p>Oral 2-3: Predicting Outcomes of Hepatitis using AutoML and XGBoost</p> <p>Hao Wang 汪昊, Ratidar Technologies LLC</p>
14: 45 - 15: 00	<p>Oral 2-4: A Two-Stage Coronary Artery Stenosis Detection Method</p> <p>Panxiang Liu 刘盼想, Donghua University, China</p>
15: 00 - 15: 15	<p>Oral 2-5: Assistive Classification Modeling of Laryngeal Squamous Cell Carcinoma based on data expansion and SSA-SVM</p> <p>Chunni Ren 任春妮, Inner Mongolia University of Science & Technology, China</p>
15: 00 - 15: 30	<p>Oral 2-6: Improved Super-harmonic Imaging of Ultrasound Contrast Agents Based on ICEEMDAN</p> <p>Yangchen Fu 付阳晨, Yunnan University, China</p>
15: 30- 15: 45	<p>Oral 2-7: Hemodynamic simulation of artery blood vessel plaque typing and the effect of bifurcation angle on plaque</p> <p>Ai Chen 陈艾, The People's Hospital of Nanchuan, China</p>
15: 45 - 16: 00	Oral 2-8:

2023年10月28日/28th October, 2023

海报展示/Poster Presentations

Poster 1: Numerical Simulation and Verification of Thromboembolism Treatment Effect Based on Different Vascular Compression Degrees

Hongyu Cheng 程鸿宇, Wenzhou University, China

Poster 2: GLFSU-Net: Global and Local Features Fusion Using Separable U-Net to Improve Anatomical Landmark Detection in 2D X-Ray Radiography Images

Jixiang Ding 丁纪翔, School of Computer Science and Technology, Huaqiao University, China

Poster 3: Medication Patterns of Traditional Chinese Medicine for Acute Mastitis Treatment: A Text Data Mining Approach on Sheng Ji Zong Lu

Dongdong Wei 韦冬冬, Shandong University of Traditional Chinese Medicine, China

Poster 4: A Gastrointestinal Endoscope Navigation Method with PoseLSTM

Feifan Lin 林飞凡, Xiangtan University, China

Poster 5: Differentiable Attention Unet-like Neural Architecture Search for Multimodal Magnetic Resonance Imaging-based Glioma Segmentation

Jing Qin 秦璟, University of Electronic Science and Technology of China

Poster 6: Progress of artificial intelligence ultrasound in cancer diagnosis

Ying Huang 黄莺, Chongqing People's Hospital, China

Poster 7: Dynamic fMRI specific complexity classification of MRI-negative temporal lobe epilepsy combined with machine learning

Hao Cheng 程浩, Hebei University of Technology, China

Poster 8: Progress and prospect of artificial intelligence in the diagnosis and treatment of liver cancer

Jianhao Yu 余剑豪, Jilin International Studies University, China

Poster 9: Design and research of strabismus correction therapy game system based on eye tracking technology

Baizhen Zhu 朱柏臻, Xiamen University of Technology, China

Poster 10: A four-class classification of ocular diseases based on multi-model comparative training

Chaoran Sun 孙超然, Nankai University Binhai College, China

Poster 11: A composite quality assessment of traditional Chinese medicine tongue images based on shallow and deep features fusion

Tengda Zhang 张腾达, Guangzhou University of Chinese Medicine, China

Poster 12: Noninvasive evaluation platform for portal hypertension-convolutional neural network deep learning algorithm for diagnosing portal hypertension

Junhao Ping 平君豪, The First School of Clinical Medicine, Lanzhou University, China

Poster 13: Intelligent orthopedic traction bed - a pioneer of intelligent medical devices with intelligent diagnosis and treatment functions under the background of medical big data

Ge Xu 徐歌, The First School of Clinical Medicine, Lanzhou University, China

Poster 14: Identification and prognostic modeling of clinical factors associated with Gastric Cancer based on the TCGA database

Siyue Fan 凡思月, Shanghai Institute of Technology, China

Poster 15: Preoperative Glioma Grading Based on Hierarchical Information

Fuchun Liu 刘富春, South China University of Technology, China

Poster 16: Comparison study of experiment in anaerobic digestion from solid substrates and mathematical model

Xiao-Ying Lu 吕晓莹, Technological and Higher Education Institute of Hong Kong, China

Poster 17: Dynamic fMRI specific complexity classification of MRI-negative temporal lobe epilepsy combined with machine learning

Hao Cheng 程浩, Hebei University of Technology, China

Poster 18: Construction and study of breast cancer prediction model based on machine learning

Yichen Zhang 张奕谏, University of Science and Technology Beijing, China

Poster 19: Venous Malformation Discrimination by Phleboliths Detection with Deep Learning

Yuwei Cai 蔡雨薇, Jiangnan University, China



Opening Address

Prof. Zhisheng Huang

Free University (VU), Amsterdam, The Netherlands

Professor Zhisheng Huang is a tenured senior researcher at the Department of Artificial Intelligence of VU University Amsterdam, the Netherlands, and a full professor at the School of Computer Science and Engineering of Wuhan University of Science and Technology, China. Prof. Huang obtained a doctorate degree in computer science and logic at the University of Amsterdam in 1994. He has published more than 200 papers, and more than 9 books in Artificial Intelligence, logics, and multimedia. He received the best paper award for the paper entitled “Feasibility Estimation for Clinical Trials” at the 2014 International Conference on Health Informatics (HEALTHINF/BIOSTEC).



Keynote Speech 1

Prof. Erik Meijering

University of New South Wales, Australia

Erik Meijering is a Professor of Biomedical Image Computing in the School of Computer Science and Engineering (CSE), University of New South Wales (UNSW), Sydney, Australia. His research interests are in Computer Vision and Artificial Intelligence for Quantitative Biomedical Image Analysis, on which he has published more than 160 peer-reviewed papers. He received his MSc degree in Electrical Engineering from Delft University of Technology (1996) and his PhD degree in Medical Image Analysis from Utrecht University (2000), both in the Netherlands. Before moving to UNSW (in 2019), he was a Postdoctoral Fellow (2000-2002) at the Swiss Federal Institute of Technology in Lausanne, Switzerland, and an Assistant Professor (2002-2008) and later Associate Professor (2008-2019) at Erasmus University Medical Center in the Netherlands. He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and served on the IEEE SPS Technical Committee on Bio Imaging and Signal Processing (BISP), the IEEE EMBS Technical Committee on Biomedical Imaging and Image Processing (BIIP), and the cross-Society IEEE Life Sciences Technical Community (LSTC). He also was/is an Associate Editor for the IEEE Transactions on Medical Imaging (since 2004), the International Journal on Biomedical Imaging (2006-2009), the IEEE Transactions on Image Processing (2008-2011), and Biological Imaging (since 2020), has co-edited various journal special issues and co-organized conferences in the field, notably the IEEE International Symposium on Biomedical Imaging (ISBI) and the International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), and served/serves on a great variety of other international conference, advisory, and review boards.

Speech Title: [Artificial Intelligence in Bioimage Analysis](#)

Advanced biomedical imaging technologies play a key role in both healthcare and the life sciences, as they allow visualizing the structure and function of organs, tissues, cells, and even single molecules with very high sensitivity and specificity. Biomedical imaging devices typically generate vast amounts of multiparametric spatiotemporal imaging data, containing much more relevant and subtle information than can be processed by humans, even if they are experts. Hence there is an ever-growing need for computational methods to analyze these data automatically, not only to cope with the sheer volume of the image data sets, but also to reach a higher level of accuracy, objectivity, and reproducibility. To this end we develop advanced computer vision methods for a wide range of problems, including restoration, enhancement, super-resolution, and registration of images, as well as detection, segmentation, quantification, classification, and tracking of objects in these images. To cope with the high complexity of these problems, we rely increasingly on machine learning approaches for this, in particular deep learning using artificial neural networks. In addition to developing new methods, we are strong proponents of evaluating and benchmarking methods thoroughly and making them publicly available in the form of user-friendly software tools. This talk will highlight some of the methods we have been developing, especially for the analysis of cellular and intracellular dynamic processes and morphologies, to facilitate biological studies of the molecular mechanisms of life in health and disease.



Keynote Speech 2

Prof. Yao Lu

Sun Yat-sen University, China

Yao Lu, Ph.D., professor of School of Computer Science and engineering, and director of the Institute of Scientific Computing at Sun Yat-sen University, was selected as a national high-level talent program and "Yixian Scholar" of Sun Yat-sen University. At present, he is PI of South China State Key Laboratory of Oncology, the President of Guangdong High Performance Computing Society. His research interest is in the field of medical image analysis, medical big data analysis and machine learning. He was rewarded research fund from Susan Komen Foundation of Breast Cancer Foundation, key Tianyuan grant of National Natural Science Foundation, Key R&D National Cooperation Project of the Ministry of Science and Technology, Key R&D Project of the Ministry of Science and Technology, Frontier and Technology Innovation major project of Guangdong Province, and Cultivation grant of Sci&Tech Foundation Project of Ministry of Education, etc. He won the second prize of Science and Technology Progress of Guangdong Province as the first awardee, participated in the publication of an international organization standard for artificial intelligence and three national industry standards for medical AI devices, published more than 100 academic papers, and transferred six invention patents.

Speech Title: [Medical Image Processing Methods and Clinical Applications](#)

Mathematical image processing methods have extensive applications in the field of medical imaging. In recent years, many traditional mathematical image processing methods have been replaced by deep learning methods in practical applications. However, there are many ideas in mathematical image processing methods that can be integrated with deep learning frameworks, including sparsity, multi-scale, multi-objective optimization, etc. In this talk, we first review the image processing methods in different tasks in the field of medical imaging, and then discuss the clinical applications of medical image processing methods based on practical problems.



Keynote Speech 3

Prof. Shaofu Lin

Beijing University of Technology, China

Speech Title: TBD



Keynote Speech 4

Prof. Pier Paolo Piccaluga

School of Medicine, Bologna University, Italy

PI for Genomic and Precision Medicine Research Group

Pier Paolo Piccaluga, MD, Ph.D. is currently an Associate Professor of Pathology at the Department of Medical and Surgical Sciences, Bologna University School of Medicine— Institute of Hematology and Medical Oncology, and executive physician at The Biobank of Research, IRCCS Azienda Ospedaliera-Universitaria di Bologna. In 2018, he was appointed to teaching posts at the Queen Mary University of London and Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya. He is the author of several international publications in journals such as Nature Medicine, Journal of Clinical Investigation, Journal of Experimental Medicine, Journal of Clinical Oncology, Blood, Lancet Oncology, and Lancet Infectious Diseases. Prof. Dr. Piccaluga is ranked a Top Italian Scientist (TIS) by VIA-Academy.

Main clinical interest: Clinical Hematology, Hematopathology, and Molecular Diagnostics

Main Research Interests: viruses and lymphomagenesis; genomics and metabolomics of hematological malignancies; digital pathology

Speech Title: TBD

Instructions for Presentations

Oral Presentation

1. Timing: a maximum of 15 minutes total, including speaking time and discussion. Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
2. You can use CD or USB flash drive (memory stick), make sure you scanned viruses in your own computer. Each speaker is required to meet her/his session chair in the corresponding session rooms 10 minutes before the session starts and copy the slide file (PPT or PDF) to the computer.
3. It is suggested that you email a copy of your presentation to your personal inbox as a backup. If for some reason the files can't be accessed from your flash drive, you will be able to download them to the computer from your email.
4. Please note that each session room will be equipped with a LCD projector, screen, point device, microphone, and a laptop with general presentation software such as Microsoft PowerPoint and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fonts and symbols. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
5. Movies: If your PowerPoint files contain movie, please make sure that they are well formatted and connected to the main files.

Poster Presentation

1. Maximum poster size is 59.4 CM wide by 84.1 CM high (A1) .
2. Posters are required to be condensed and attractive. The characters should be large enough so that they are visible from 1 meter apart.
3. Please note that during your poster session, the author should stay by your poster paper to explain and discuss your paper with visiting delegates.

Notice for Participants

欢迎各位专家学者们参加第四届医学人工智能国际学术会议（ISAIMS2023），为了您在会议期间方便顺利，请注意以下事项：

Welcome all leaders and researchers to the 2023 4th International Symposium on Artificial Intelligence for Medical Sciences (ISAIMS 2023). For your convenience during the conference, please pay attention to the following concerns:

线上参会：

1. 会议将通过线上及线下同步召开，线上参会请先下载 **ZOOM** 最新版。
下载链接：<https://zoom.us/download>
2. 参会者可通过以下任意一个方式进入线上会议室：（请将名称改为自己的姓名拼音。）
 - a. 输入对应的会议 ID 和密码，参见会议日程表格。
 - b. 点击链接以启动 ZOOM，直接进入会议室。

会场链接：<https://zoom.us/j/83087294989?pwd=RjFhak1YeExUNzV0Z3FKSmllSHpzd09>

会议号：**830 8729 4989** 密码：**242689**

1. The conference will be held on **ZOOM Meeting**. To participate online, please download the latest version of ZOOM first

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2. You can access the online conference room by **either** of the following two ways: (**Please use your real name in the meeting room.**)

- a. Input the ZOOM Meeting ID and the Password respectively, which is shown on the conference agenda.

OR

- b. Click the link:

<https://zoom.us/j/83087294989?pwd=RjFhak1YeExUNzV0Z3FKSmllSHpzd09>

Conference ID: 830 8729 4989 Password: 242689

2. 参会期间，如需提问，可待演讲完毕后，在对话框中发送“2”，主持人将会为您解除静音。

2. During the conference, if you would like to ask questions to the speaker, please send number “2” in the chat box after the speech. The host will unmute you.

线下参会：

1. 会议地址：成都太古里河畔亚朵酒店-锦绣厅（1楼）
 2. 酒店信息：成都太古里河畔亚朵酒店（四川省 成都 成华区望平街滨河路8号）
1. Address: Atour Hotel (Chengdu Taikoo Li)
 2. Hotel information: No. 8 Wangping Binhe Road, Chenghua District, Chengdu, Sichuan, China



Vivian Wang | 王老师
联系手机(微信同号): 19139737380
咨询邮箱: isaims2020@163.com
QQ咨询: 2644824662

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