

MICCAI SIG-Cardiac: Special Interest Group on Cardiac Imaging, Computational Modeling and Clinical Sciences

Mission

The primary mission of SIG-Cardiac is to bring together cardiologists, radiologists, computer scientists, and engineers to promote interdisciplinary collaboration. By organizing satellite events at MICCAI conferences and international workshops, SIG-Cardiac aims to:

- **Foster Interdisciplinary Collaboration:** Connect cardiologists, radiologists, computer scientists, and engineers to promote interdisciplinary collaboration.
- **Integrate Research Breakthroughs:** Facilitate the integration of emerging technologies, such as AI, computer vision, and advanced imaging techniques, into clinical practice.
- **Financial Support for Education:** Organize challenges and tutorials at MICCAI conferences to educate and train clinicians and researchers.

Objectives

- **Bridging Research and Clinical Practice:** The SIG-Cardiac will play a pivotal role in bridging the gap between cutting-edge research and clinical applications in cardiac care.
- **Contributing New Datasets, Tutorials, and Challenges:** The SIG-Cardiac will make significant contributions to the research community by providing high-quality datasets relevant to cardiac imaging and interventions.
- **Establish a Specialized Community:** The SIG-Cardiac will provide a conducive environment for members to connect with leading experts and potential collaborators, nurturing a supportive network that spans across disciplines and institutions.

2025 Activities

Online Tutorial

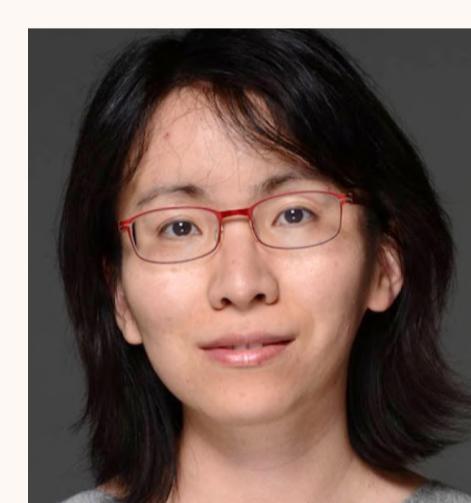
The SIG-Cardiac Tutorial on cardiac digital twin was held on 27th June 2025.



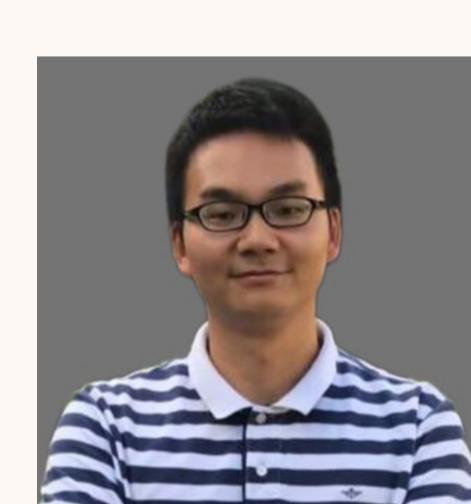
- **Digital Twins in Healthcare: Synergies of Physics and Data-driven Models for Cardiology**
- **Dr. Julia Camps**
Universitat Pompeu Fabra, Spain

Online Seminar

Two SIG-Cardiac Online Seminars were held on 21st July and 24th Aug 2025, separately.



- **Advancing Radiology Report Generation with Large Language Models**
- **Prof. Yulan He**
King's College London, UK



- **Artificial Intelligence in Diagnosis and Treatment of Cardiovascular Diseases**
- **Prof. Xiaowei Xu**
Guangdong Provincial People's Hospital, China

Workshop on Digital Twin for Healthcare

International Workshop on Digital Twin for Healthcare (DT4H) will take place on **23 Sep 2025, from 13:30 AM to 18:00 AM in MICCAI**.

Keynote Speakers



Prof. Linwei Wang
Rochester Institute of Technology



Dr. Mathias Unberath
Johns Hopkins University



Prof. Henggui Zhang
University of Manchester

Predictive Hybrid Digital Twins: Theory, Methods, and Applications

Digital Twins for Surgical Data Science

Development of the virtual heart for the study of cardiac arrhythmias

CARE 2025 Challenge

Comprehensive Analysis & computing of REal-world medical images (CARE2025) provides imaging data from more than 2,000 patients, especially the patients with cardiovascular diseases.

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**Welcome to
join us!**