The First Workshop on

Generative AI for Biomedical Image Analysis: Opportunities, Challenges and Futures (GAIA)

ICCV 2025 @ Honolulu, Hawaii
Date and Location TBD
Half Day Workshop

News

- Workshop website launched with Call-for-Papers and speakers announced.
- Paper submission site is now open via OpenReview.
- Paper submission deadline: August 20, 2025.
- Workshop scheduled for October 19-20, 2025 in Honolulu, Hawaii.

Introduction

Generative AI is transforming biomedical image analysis, creating new possibilities and solutions for healthcare. Although generative AI has significantly advanced medical imaging and diagnostics, developing reliable, clinically applicable systems remains challenging due to interpretability concerns, data quality issues, and regulatory compliance.

This workshop explores how generative AI is reshaping biomedical image analysis across three critical areas:

(1) Data Synthesis and Clinical Modeling: Generative models revolutionize training data creation and disease simulation by producing anatomically accurate images, addressing class imbalances, and enabling cross-modal image synthesis (e.g., MRI to CT). These models also simulate disease progression, empowering clinicians to visualize patient outcomes and evaluate treatment effectiveness. Additionally, conditional generative models enhance segmentation accuracy, while synthetic lesion generation enriches training datasets. Ensuring clinical reliability, reducing biases, and meeting regulatory standards remain essential challenges.

(2) Multimodal Learning: Integrating generative AI with large language models (LLMs) combines visual data with insights from medical reports and electronic health records, enabling systems to extract crucial information and generate informative summaries. This fusion enhances clinical communication and supports improved decision-making. However, significant challenges, such as interpretability, mitigating AI-generated inaccuracies, and aligning with clinical standards, must be addressed.

(3) Workflow Automation: Generative AI streamlines medical imaging workflows from acquisition to diagnosis. Intelligent AI agents automate tasks such as routine medical inspections, automated image analysis, and automated delineation of radiotherapy target areas. These advancements can significantly improve efficiency and consistency in clinical practices. Nevertheless, challenges related to regulatory approval, data privacy, and model reliability persist.

Our workshop brings together experts from computer vision, healthcare, and AI research to address these challenges and opportunities in applying generative AI to biomedical image analysis through interdisciplinary collaboration.

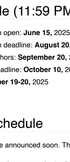
Invited Speakers

Dimitris N. Metaxas

Distinguished Professor
Rutgers University

Kun-Hsing Yu

Associate Professor
Harvard Medical School



Daguang Xu (TBD)

Principal Research Scientist
NVIDIA

Akshay Chaudhari

Assistant Professor
Stanford University

Call for Papers

We invite submissions of full-length papers (up to 8 pages excluding the references, 4-6 pages recommended) for workshop proceedings. The topics covered in the workshop include but are not limited to:

- Medical Image Generation & Synthesis
- Vision-Language Foundation Models
- Clinical Workflow Intelligence
- Generative Disease Dynamics
- Trustworthy Medical AI
- LLM-Enhanced Clinical Reasoning
- Distributed Medical Imaging Systems
- Generative Surgical Simulation
- Multimodal learning for medical image analysis
- AI agents for healthcare applications

Submission Instructions

All submissions should follow the ICCV 2025 instructions. The papers will be subject to a **double-blind** review process, i.e. authors must not identify themselves on the submitted papers. The reviewing process is single-stage without rebuttals.

Submit Your Paper

Submit via OpenReview

- Online Submission System: OpenReview
- Submission Format: official ICCV 2025 template (double column; up to 8 pages, 4-6 pages recommended, excluding references).

All authors submitting a paper are required to have an OpenReview profile. New profiles with institutional emails are automatically activated, while those without one undergo a moderation process, taking up to two weeks.

Timeline Table (11:59 PM, Pacific Time)

- Paper submission open: **June 15,** 2025
- Paper submission deadline: **August 20,** 2025
- Notification to authors: **September 20,** 2025
- Camera-ready deadline: **October 10,** 2025
- Workshop: **October 19-20,** 2025

Workshop Schedule

Detailed schedule will be announced soon. The workshop will feature:

- Invited talks by leading experts in the field
- Oral presentations of accepted papers
- Poster session for paper presentations

Workshop Organizers

Yuanfeng Ji

Postdoctoral Researcher
Stanford University

Zhongying Deng

Postdoctoral Researcher
University of Cambridge

Xiangde Luo

Postdoctoral Researcher
Stanford University

Jin Ye

Ph.D. Student
Monash University

Xiyue Wang

Postdoctoral Researcher
Stanford University

Dan Lin

Postdoctoral Researcher
Cornell University

Junjun He

Researcher
Shanghai AI Laboratory

Jianfei Cai

Professor
Monash University

Angelica I Aviles-Rivero

Assistant Professor
Tsinghua University

Carola-Bibiane Schönlieb

Professor
University of Cambridge

Shaoting Zhang

Principal Scientist
Shanghai AI Laboratory

Ping Luo

Associate Professor
University of Hong Kong

Sponsors

Sponsor information will be available soon.

Contact Info

E-mail: yfj@stanford.edu, zd284@cam.ac.uk

Acknowledgement

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