CALL FOR PAPERS
Workshop on Artificial Intelligence in Healthcare (AIH 2025) | 7 September 2025

To be held in conjunction with the 2025 IEEE 14th International Conference on Consumer Electronics - Berlin (ICCE-Berlin)
Berlin, Germany | 6-8 September 2025

The rapid advancement of Artificial Intelligence (AI) technologies presents transformative opportunities for healthcare. From predictive analytics and virtual twins to generative AI and deep learning, the integration of AI into healthcare promises significant improvements in diagnostics, treatment personalization, clinical decision-making, patient care, healthcare management, drug discovery, telemedicine, and remote patient monitoring. Additionally, AI-driven methodologies enhance medical research, patient safety, healthcare efficiency, and resource optimization across clinical settings. This workshop aims to bring together researchers, clinicians, healthcare practitioners, data scientists, biomedical engineers, industry experts, and policymakers to discuss state-of-the-art developments, practical implementations, ethical implications, current challenges, and future directions of AI applications in healthcare.

We invite submissions of original, unpublished papers addressing topics including, but not limited to:

Predictive Analytics and Decision Support:

- Clinical decision-making and AI-driven support systems
- Predictive modeling for disease progression and early intervention
- Risk stratification, prognosis, and personalized patient management
- AI for precision medicine and treatment optimization

Virtual Twins Models in Healthcare:

- Development and deployment of virtual twins in healthcare
- Personalized medicine through virtual twin technology
- Virtual twin modeling for chronic disease management (e.g., diabetes, cardiovascular conditions)

Generative AI in Healthcare:

- Synthetic data generation for clinical research and clinical trials
- Generative models for medical image synthesis, enhancement, and reconstruction
- Natural Language Processing (NLP) for clinical documentation, medical literature summarization, and chatbot interactions
- Generative AI for drug discovery and molecular design

Deep Learning Applications:

- Medical imaging analysis (radiology, pathology, dermatology, ophthalmology, etc.)
- Time-series analysis and forecasting for health monitoring and disease management
- Biomarker discovery and multi-omics data integration using deep learning
- Real-time diagnostic systems and anomaly detection

Explainable AI (XAI) in Healthcare:

- Methods for interpretability and transparency of AI models
- Ethical implications and trustworthiness of black-box models
- Regulatory considerations and compliance (FDA, EMA, GDPR guidelines)
- Human-in-the-loop approaches to enhance clinical acceptance

Federated and Privacy-preserving AI:

- Federated learning for multi-institutional collaborations and data privacy
- Privacy-preserving AI for secure health data sharing and collaboration
- Differential privacy and homomorphic encryption in healthcare applications
- Secure multi-party computation and distributed analytics

AI-driven Healthcare Operations and Management:

- Resource allocation, staffing, and operational optimization
- AI applications for hospital and healthcare system management
- Patient flow modeling, scheduling optimization, and capacity planning
- Real-time monitoring and healthcare infrastructure management

Ethics, Fairness, and Policy:

- Ethical challenges and potential solutions for AI deployment in healthcare
- Bias detection, fairness evaluation, and equitable AI-driven healthcare
- Policy frameworks, regulations, and governance models for AI integration
- Societal impacts, patient rights, and ethical responsibilities

Healthcare Robotics and Autonomous Systems:

- AI-driven robotic surgery and intervention
- Autonomous patient monitoring and care assistance systems
- Robotics for rehabilitation, assisted living, and elderly care
- Human-robot collaboration in clinical settings

Telemedicine and Remote Patient Monitoring:

- AI-powered telemedicine applications and virtual consultations
- Remote patient monitoring technologies and predictive health analytics
- Mobile health applications and wearable device integration
- AI-enhanced patient engagement and remote care

AI and Public Health:

- AI-driven epidemic forecasting, surveillance, and outbreak management
- Population health analytics and interventions
- Health informatics, epidemiological modeling, and health policy decision-making
- AI applications in health education, promotion, and preventive medicine

Important Dates:

- Paper Submission Deadline: 03 August 2025
- Notification of Acceptance: 17 August 2025
- Camera-Ready Submission: 24 August 2025
- Workshop Date: 7 September 2025

Submission Guidelines:

Please submit your paper electronically in the PDF format using the following submission link: https://edas.info/newPaper.php?c=33570&track=132820.

Authors are invited to submit original, unpublished manuscripts of 2- to 6-page length, including figures and references, with a 200-word abstract, written in English, using the 10-point font, double-column, single-space IEEE conference paper format. Previously published papers or papers under review for other conferences/journals should *not* be submitted for consideration. All papers must be submitted through the EDAS Conference and Journal Management System website. No more than two (2) additional printed pages (10-point font) over the 6-page limit may be included in your submission, and the extra pages will incur an over-length page charge of US$100 per page, if accepted for publication.

For the final submission, please verify your paper with IEEE PDF eXpress® (conference ID: 67488X). Only IEEE-compliant papers that have been accepted, registered, and presented (including 2-page, regular, special session, and research forum papers) will be published in the ICCE Berlin 2025 Proceedings and submitted to IEEE Xplore for indexing. A selected set of papers of the ICCE Berlin 2025 program will be invited for re-submission to special issues of peer-reviewed journals (IEEE CE Magazine, IEEE Transactions on Consumer Electronics) based on the reviewers' feedback and quality of conference presentation.

We look forward to welcoming you to AIH 2025 and exploring the exciting intersection of AI and healthcare.

Workshop Chair:

- Dr. sc. Alexandros Tanzanakis, Friedrich-Alexander-Universität Erlangen-Nürnberg

Publication Chairs:

- Prof. Dr. Tolga Arul, Universität Passau
- Dr.-Ing. Nikolaos Athanasios Anagnostopoulos, Universität Passau