Special Session on Intelligent E-Health: Leveraging Data for Digital Health Transformation and eXplainability

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Description

The digital transformation of healthcare is creating unprecedented opportunities to revolutionize patient care through data-driven technologies. This special session, "Intelligent E-Health," focuses on harnessing the power of data to build transparent, trustworthy, and effective digital health solutions. We will explore how explainable artificial intelligence and advanced data science can transform clinical decision-making, enhance diagnostic accuracy, and optimize healthcare delivery while maintaining the highest standards of transparency and ethical practice. The session will also examine the growing role of Large Language Models in enhancing clinical workflows, from automated documentation to patient communication and medical knowledge management.

Particular emphasis will be placed on integrating multimodal medical data, such as imaging, agenomics, and real-time sensor streams, into unified analytical frameworks capable of supporting precision medicine at scale. Furthermore, we will discuss the emerging use of federated and privacy-preserving learning paradigms that enable secure model training across decentralized clinical institutions without compromising patient confidentiality.

The session will address the integration of diverse healthcare data sources, from electronic health records and genomic information to real-time wearable outputs, into interpretable and actionable clinical insights. Key themes include developing scalable frameworks for model explainability, implementing robust data engineering practices to support complex data types, and addressing the critical ethical and privacy considerations in AI-driven healthcare. We will examine how explainable AI techniques, including the strategic application of Large Language Models for tasks like clinical note generation and information retrieval, can be effectively applied across various domains. This encompasses clinical decision support systems, medical imaging, diagnostics, and personalized treatment planning, with a particular emphasis on creating systems that healthcare professionals can understand, trust, and effectively utilize in their daily practice.

This special session aims to bridge the gap between technological innovation and clinical practice by bringing together researchers, healthcare providers, data scientists, and industry leaders. Participants will share advances in explainable AI methodologies, discuss implementation challenges, and establish best practices for developing transparent, reliable digital health systems that improve patient outcomes, optimize healthcare processes, and ensure compliance with evolving regulatory standards.

Topics of Interest

- Data Science Techniques for Explainable Healthcare Models
- Interpretable Machine Learning for Clinical Decision Support
- Transparent AI in Medical Imaging and Diagnostics
- LLM Applications in Healthcare Documentation and Knowledge Systems
- Ethical and Privacy-Preserving Frameworks for Healthcare Data

- LLM and Multimodal AI for Clinical Reasoning and Diagnosis
- Integration of Explainable Models in Digital Health Workflows
- Human-Centered Design for Trustworthy Health AI
- Regulatory Compliance and Validation of Explainable AI Solutions
- Case Studies in Deploying Transparent AI for Clinical Applications
- Emerging Trends in Data-Driven Digital Health Transformation
- Federated and Privacy-Preserving Learning for Distributed Clinical Data
- Real-Time Clinical Decision Support Using Multimodal Streaming Data Analytics

IMPORTANT DATES

Full paper submission: 15th January, 2026
Notification of acceptance: 10th February, 2026
Camera ready and registration : 20th February, 2026

Ketan Kotecha is a Professor of Computer Science & Engineering and holds the following positions. Head of the Symbiosis Centre for Applied Artificial Intelligence (SCAAI), Dean, Faculty of Engineering, Symbiosis International (Deemed University), Director of the Symbiosis Institute of Technology,. EDx speaker 2015 | Author – Introduction to Critical Thinking (Macmillan).

He gained his PhD from the Indian Institute of Technology, Bombay, India, and is a recipient of Erasmus + faculty mobility grants from the European Union, a LEAP (Leadership for Academicians Programme) grant from MHRD Govt of India in collaboration with IIT Kharagpur and University of Cambridge UK, November 2019 - January 2020. DUO- INDIA Professor fellowship under Asia - Europe Meeting (ASEM-DUO) with Brunel University, UK, 2020. Two Research grants worth INR 1.66 crores under Promotion of Academic and Research Collaboration (SPARC) scheme by MHRD, Govt of India, in collaboration with Arizona State University USA and University of Queensland, Australia.
Dr. Kotecha was invited and received sponsorship from the Embassy of the United States of America to participate in US-India Higher Education Collaboration Workshop for establishing international partnerships for research and academic collaborations with India and USA (Washington D.C on April 2020)

Raouia Mokni is an Assistant Professor of Computer Science at the Higher Institute of Management of Gabes (ISGG), University of Gabes, Tunisia. She holds a PhD in Computer Science from the University of Sfax, Tunisia, with a specialization in the application of Artificial Intelligence to data engineering.
Prior to her current position, she served as an Assistant at ISGIS Sfax and later as an Assistant Professor at the College of Computer Engineering and Science, Prince Sattam Bin Abdulaziz University (PSAU), Saudi Arabia. She has acted as Quality Coordinator for the MSc Data Science program and contributed to the NCAAA accreditation committee. Her academic portfolio includes leadership and participation in over six funded research projects, and she has authored more than 30 peer-reviewed scientific publications.
Her research interests span computer vision, data science and engineering, healthcare, artificial intelligence, natural language processing, biometrics, pattern recognition, and image processing.

Boudour Ammar is currently the chair of IEEE Computational Intelligence Tunisia chapter and an associate professor with the Department of Department of management IT at Higher Business School of Sfax (ESCS), University of Sfax, Tunisia. She has the PhD in Computer Science in 2014 and Habilitation to Direct Research

(HDR) in 2023 from the National Engineering School of Sfax (ENIS) with the Research Group in Intelligent Machines (REGIM), University of Sfax and she is involved in the supervision of PhD students. In recent years, Dr. Boudour published many highly cited research papers in IEEE Transaction of neural Networks and Learning systems, IEEE Transactions on Affective Computing, Neural Processing Letters, Applied Soft Computing, Neurocomputing, Cybernetics & systems and cognitive computation, Engineering applications of Artificial Intelligence journals. She also published papers in conferences such as International Joint Conference on Neural Networks (IJCNN), International Conference on Neural Information Processing. Her research interests include iBrain (Machine learning, Brain Computing Interaction, Recurrent neural Network) and i-health (Autonomous Robots, Intelligent Control, medical applications, EEG and ECG signals). Boudour was the head of the Career Center and Certification Skills 4C-ENIS in 2018-2019 and she has been trusted with different duties: a technical chair, a Technical Program Chair member, and a reviewer for many leading international scientific committee conferences and journals. She participated in the organization of many events: conferences (AMCAI, ITSIS, ICAIGE) and workshops (IDSS, GAITA).

Amal Jlassi, PhD is a specialist in Artificial Intelligence with extensive expertise in deep learning, medical image processing, smart agriculture, and natural language processing. She serves as the Scientific and Strategic Director at UIK and is an Nvidia Ambassador, actively promoting AI education and innovation.