The 2024 Spring Academic Conference of the Korean Society of Medical Informatics (KOSMI) marked a significant milestone in the field of medical informatics with its theme, “Omnibus Omnia.” Continuing KOSMI’s 36-year tradition of annual meetings, the conference convened healthcare professionals, researchers, industry experts, and policymakers (Table 1). The satisfaction survey revealed that among the 304 respondents, 212 (69.7%) were in their 20s and 30s. This group included 25 (8.2%) undergraduate students and 83 (27.3%) graduate students, emphasizing the strong presence of young and emerging researchers and students. The attendees’ professional backgrounds were diverse: 63 (20.7%) were researchers, 46 (15.1%) professors, 47 (15.5%) industry professionals, and 40 (13.2%) from various other fields. This varied participation highlights the conference’s broad appeal and its interdisciplinary nature.

The opening session, led by Organizing Committee Chairman Kim Dae-Jin, focused on the theme “Omnibus Omnia.” He expressed his enthusiasm for exploring the impact of Fourth Industrial Revolution technologies, big data generative research, and artificial intelligence on healthcare. He also highlighted the conference as a valuable opportunity to share knowledge about these advancements. Society President Han Ho-Seong predicted that artificial intelligence (AI) in healthcare would establish a new paradigm, distinct from traditional medicine. He expressed his commitment to enhancing the medical environment through health information technology, which encompasses various technological trends aimed at improving the quality of life and health for many. Hwang Jong-Sung, President of the National Information Society Agency, emphasized the significance of data and AI as tools that support human endeavors. He advocated for the use of synthetic and multimodal data without compromising privacy and promoted the active development of AI
models and services in healthcare. Lee Hwa-Sung, President of the Catholic Medical Center, expressed his hope that the conference would showcase a variety of new technologies and stimulate policy discussions to address current challenges. He looked forward to the event opening new avenues in healthcare.

The Beom-San Special Lecture, delivered by Ko Haksoo, Chairman of the Personal Information Protection Commission, centered on “Promoting the Utilization of Healthcare Data in the AI Era.” He stressed the importance of establishing an internationally consistent regulatory framework to address the evolving methods of data processing and the increasing complexity of risks. He introduced new guidelines for processing pseudonymous data and emphasized the need for segment blurring and access controls. Additionally, he noted that the expansion of MyData would significantly transform daily life, urging increased interest and participation.

Leo Anthony Celi from the Massachusetts Institute of Technology delivered the keynote speech. His presentation, titled “Data-driven Healthcare,” emphasized the integration of medical information with precision medicine. He explored the existing challenges, international trends, and the strategy to gather and share data from one million participants for a national biobank project.

During the symposia held over the course of 3 days, various innovative approaches and future trends in healthcare were discussed, highlighting significant advancements and research (Figure 1). The importance of privacy-preserving technologies in handling medical data was emphasized, with techniques such as homomorphic encryption and federated learning presented as solutions for secure data utilization across institutions, essential for precision medicine and diagnostics. The symposiums also covered the efficient sharing of personal medical information through initiatives like “Medical MyData,” which streamlines health record management while safeguarding sensitive information. Customized digital healthcare services for vulnerable populations, including children, people with disabilities, and those with chronic diseases, were highlighted to strengthen digital health equity. The digital transformation in nursing was explored, showcasing solutions designed to improve nursing practice through advanced tools and platforms. The future of convergent medicine was presented through collaborative efforts at Seoul National University Hospital, discussing the integration of AI, precision medicine, and biopharmaceuticals, emphasizing interdisciplinary research. Additionally, the evolution of healthcare in the era of artificial general intelligence was examined, focusing on the potential of advanced language models to transform healthcare practices by increasing diagnostic accuracy and operational efficiency. Lastly, the National Project of Bio Big Data was introduced, integrating clinical and genomic data to create a comprehensive data bank for research and policy use, facilitating large-scale data analysis and supporting various research endeavors.

The industry sessions showcased innovative partnerships between technology and healthcare, highlighting the critical role of digital transformation in medicine. For example, Hallym University Medical Center’s On-Care system now supports remote consultations and virtual rounds through Zoom. PYEONGHWA IS enhances efficiency in medical environments by integrating AI voice recognition and big data, effectively connecting healthcare data through voice electronic medical record. JNPMEDI’s Maven Clinical Cloud, a cloud-based solution, boosts the efficiency and stability of clinical trials via robust data collection and analysis. AITRICS’s AI-driven monitoring solution, VitalCare, utilizes time-series medical data to detect and predict changes in patient conditions early, with explainable AI providing user-friendly prediction results for medical professionals. The Datarse introduces the PAmaster solution, which focuses on...
pseudonymizing and anonymizing personal data to ensure the secure handling of sensitive information. NAVER Cloud is at the forefront of digital healthcare innovation with HyperCLOVA X, a large-scale AI model that aids clinical decision-making, biomedical research, and health consultations. The strategies employed by these companies significantly improve the efficiency of medical practices and the quality of patient care.

The Active Senior Forum recently explored the integration of AI technologies to enhance support for older adults, with a focus on improving their quality of life through advanced healthcare solutions. Held for the first time this year, the forum gathered experts who have been instrumental in advancing KOSMI to its current prominence, along with legendary figures who have made significant contributions to the field.

The 2024 Spring KOSMI conference set a progressive agenda, underscoring the vital role of technological innovation, stringent data privacy protocols, and interdisciplinary teamwork in defining the future of medical informatics. It emphasized the significance of secure data use, the incorporation of AI into healthcare, and the creation of digital health solutions designed for vulnerable groups. By promoting dialogue on cutting-edge technologies and cooperative initiatives, the conference paved the way for substantial improvements in healthcare practices and patient outcomes.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Acknowledgments

This conference summary is based on Daily KOSMI updates made possible by the valuable input and efforts of KOSMI’s Academic Committee members and the following 1st Student Reporters: Soo-ah Cho, The Research Institute for Veterinary Science, College of Veterinary Medicine, Seoul National University; Wongyung Choi, The Research Institute for Veterinary Science, College of Veterinary Medicine, Seoul National University; Hyunjoo Jeon, Sungkyunkwan University; Woohyuk Jeon, Department of Computer Engineering, Gachon University; Hyunsik Kim, Wonju College of Medicine, Yonsei University; Sehyun Lee, College of Medicine, Jeonbuk National University; Seongryeong Lee, Department of Nursing, Hanyang university; Mijeong Park, Kyunghee University College of Nursing Science; Nagyeom Yoon, Gangneung-Wonju National University; ChatGPT.

ORCID

Jisan Lee (http://orcid.org/0000-0002-9039-7448)
Suehyun Lee (http://orcid.org/0000-0003-0651-6481)
Seo Yeon Baik (http://orcid.org/0009-0006-7547-4798)
Taehoon Ko (http://orcid.org/0000-0002-4045-0036)
Kwangmo Yang (http://orcid.org/0000-0002-7176-4935)
Younghiee Lee (http://orcid.org/0000-0002-6850-0082)