

Title: Application of Artificial Intelligence in Chronic Disease Management

Abstract:

Chronic diseases are defined broadly as conditions that last 1 year or more and require ongoing medical attention or limit activities of daily living or both. Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of death and disability in the United States. Chronic disease management requires an integrated care approach to managing illness which includes screenings, check-ups, regular monitoring and coordinating treatment, and patient education. This multifaceted approach underscores the complexity and resource intensity of managing chronic illnesses effectively. Clinical Decision Support Systems offer a valuable tool in this context, providing real-time data analysis and evidence-based recommendations that aid healthcare professionals in making informed decisions. By integrating patient-specific information, clinical decision support systems can help monitor patient progress, tailor treatment plans, adjust medications as needed, and educate patients about self-care, thereby improving the quality of care and patient outcomes.

In this seminar, we will elucidate some real-world evidence of how clinical decision support systems with embedded artificial intelligence (AI) can help in managing such chronic diseases, including cardio-respiratory disorders.

Bio:

Dr. Shumit Saha joined Meharry Medical College as an assistant professor of biomedical data science, in the School of Applied Computational Sciences in December 2023.

Dr. Saha received his Ph.D. in Biomedical Engineering from the University of Toronto and KITE-Toronto Rehabilitations Institute (TRI) - University Health Network in Canada. Before that, he completed his M.Sc. from the University of Manitoba, Canada, and his B.Sc. from Khulna University of Engineering and Technology, Bangladesh. Upon finishing his Ph.D., Dr. Saha served as an assistant scientist at the University Health Network (one of the globally recognized leading hospitals) and held a cross-appointment as an assistant professor at the Institute of Health Policy, Management, and Evaluation in the Dalla Lana School of Public Health at the University of Toronto.

Dr. Saha's research has focused on developing artificial intelligence (AI) embedded mobile and digital technologies, such as wearables, smartphones, and applications, to improve the management of chronic diseases. To manage chronic diseases, including heart failure, sleep apnea, diabetes, and asthma, he has developed several algorithms utilizing advanced signal processing and AI techniques. He has published more than 17 peer-reviewed papers in prestigious journals. Additionally, he is an editorial board member for Scientific Reports-Nature Publishing Group.