LEGAL POLICIES, REGULATIONS AND ETHICS IN HEALTH CARE

Abstract

AI in health care has made tremendous growth in recent years and has achieved human-level performance in areas like skin cancer classification, diabetic retinopathy detection, chest radiograph diagnosis, and sepsis treatment. However, this expansion has also raised ethical concerns, such as algorithmic and societal biases, security and privacy issues, transparency, and other unintended consequences.

Moreover, the proliferation of generative AI and large language models (such as ChatGPT, DALL-E, etc.) that can generate realistic data like images and texts, data consent, algorithmic transparency, explainability, and responsible use has become more critical than ever. Therefore, the ethical considerations in building AI/ML solutions for health care has become a critical concern among health practitioners, AI/ML researchers, data scientists, administrators, and patients. To address these issues, legal and ethical regulations for the application of AI have been developed.

This talk will briefly describe the AI regulations and policies including the recent executive order from The White house for the safe, secure and trustworthy use of AI, World Health Organization guidelines, and provide the implications of these policies on the usage of AI in health care and other applications.

About Vibhuti Gupta, Ph.D.

The primary research interests of Vibhuti Gupta, Ph.D. lie at the intersection of machine learning, trustworthy AI and medicine with an emphasis on new methods that lead to the safe, secure, responsible and meaningful adoption of machine learning in health care. Within machine learning, he is particularly interested in analyzing multimodal, and longitudinal time-varying data streams generated from digital health devices (i.e., mHealth apps, wearable devices) and utilizing that information for early diagnosis and prevention of complex human diseases. The overarching goal of his research is to develop the computational methods and tools required to organize, process, and transform health care data into actionable knowledge, along with considerations of explainability, ethics, and fairness.

Dr. Gupta received his Ph.D. from Texas Tech University in 2019 where he worked with Prof. Rattikorn Hewett and his research focused on developing

an adaptive and scalable Big stream data pre-processing approach that leverages AI techniques and is adaptable to different data rates and data types. He also holds an M.Tech in computer science from SRM University and a B.Tech in computer science from Bundelkhand Institute of Engineering and Technology.

He joined Meharry as an assistant professor in 2021. He has served as PI in American Cancer Society (ACS) DCRIDG pilot award, NIH AIM-AHEAD, NSF ExpandAI CAP, and Co-I in NSF MRI, RCMI Supplement and NASA MEUREP awards. Dr. Gupta has published more than 30 papers at reputed international journals including Cell, JMIR, IEEE sensors and in top international conferences sponsored by IEEE, and ACM.