Advances in TeleMedicine and its Usage in India

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Telemedicine development has proliferated in several countries, including India, in the last decade. With the advances in information and communication technology, there has been substantial improvement in the quality of healthcare services that can be offered for dealing with different category of diseases. This paper looks into the technological issues that are of prime concern in the growth of telemedicine services and presents a brief review of some of the telemedicine projects successfully executed in India.

The talk begins with the definition of telemedicine and emphasizes how the advances in information and telecommunication technology are combined with medicine to improve delivery of medical services to remote areas lacking in good hospitals and expert doctors. The different modalities of telemedicine services, specifically the real time and store-and forward techniques, and the important issues related to telemedicine implementation are covered. In this context, the exchange of electronic health records and other information as well as the importance of having standards such as DICOM and HL7 to ensure smooth interoperability between systems are addressed. The emergence of internet based telemedicine services with a patient centric focus is emphasized. A short discussion on pervasive healthcare which focuses on the application of pervasive computing technology for healthcare management is included. The status of telemedicine in India and the various initiatives including that at IIT Kharagpur have been described and future directions pointed out.

About the Speaker

Prof Arun Kumar Majumdar is currently a senior professor with the Department of Computer Science and Engineering of Indian Institute of Technology Kharagpur. Since 1980 he is associated with the Indian Institute of Technology, Kharagpur, first as an Assistant Professor in the Electronics and Electrical Communication Engineering Department and then from 1984 as a Professor in the Computer Science and Engineering Department. With leave from IIT, Kharagpur, he served as a Visiting Professor in the University of Guelph, Ontario, Canada in 1986-87, and in the George Mason University, Fairfax, Virginia, USA, in the summer of 1999. Earlier, he worked in the Indian Statistical Institute, Calcutta, and Jawaharlal Nehru University, New Delhi, as a faculty member.

He was awarded B. Tech, M. Tech and Ph. D degrees in Applied Physics from the University of Calcutta in 1967, 1968 and 1973, respectively. He has also obtained a Ph. D. degree in Electrical Engineering from the University of Florida, Gainesville, USA, in 1976. His research interest includes Database and Knowledge Based Systems, Design Automation, and Image Processing. He is a fellow of Indian National Academy of Engineering and also a fellow of Institute of Engineers (India). He is a Senior Member of IEEE (USA). He has over 70 paper in reputed Journals and Edited Volumes and over 90 paper in national and international conferences.

Prof Majumdar is PI or Co-PI of several projects sponsored by the Ministry of Communication and Information Technology, Gov't of India, Defense Research Development Organization (DRDO), Gov't of India, Department of Science and Technology, Gov't of India, Ministry of Human Resource Development, Gov't of India, AICTE, as well by public and private sector organizations like Allahabad Bank, UCO Bank, Calcutta Stock Exchange, M. N. Dastur and Co., Bridge and Roof Ltd. , West Bengal state Electricity Board, Department of Information Technology, Government of West Bengal, WEBEL, Kolkata, etc. which have been successfully completed or are under progress.