

Remote Healthcare: Using Technology to Facilitate Quality Healthcare for Citizens

prof. Nabendu Chaki, University of Calcutta, India

Prognosis, the science of predicting the future health status of a patient, is one of the key components for health-care services, especially for care delivery and patient management. The existing works in this area focuses on clustering of patients based on medical data attributes with certain similarities and can be used in diagnostics. Stream processing techniques have been used to handle physiological time series data from various sensors and instruments, and incorporate the domain knowledge in learning the similarity metric between patients represented by their temporal data. Time-series data has been analyzed from a population of patients in a New York hospital after masking the identity fields for privacy.

However, all these approaches suffer from certain drawbacks when considered in the context of “rural health-care” in a country like India. The foremost issue is accessibility and availability. Accessibility to the healthcare system in India is abysmally limited. The economically weaker and marginalized sections of people, particularly those living in remote villages of India have very limited and often no access to proper healthcare services. Scalability of services is another essential feature of a 24x7 live health monitoring system. In rural India, a primary health centre is set up for every 30,000 citizens and is catered by only one medical officer (whereas WHO’s norm is one doctor per 10,000 citizens).

Tremendous shortage of trained manpower (e.g., medical professionals, nurses) and huge cost for setting up state-of-the-art facilities in remote areas are two major hindrances that deny even the basic healthcare services for 80% of our citizens. Lack of accurate and timely information further adds to the problem.

Some of these issues are being addressed under the aegis of Ministry of DeitY, Government of India who is funding a project on Remote Healthcare. However, several important technical challenges are to be solved before the deliverables can be translated to reality. This lecture aims to share some of these experiences towards exploring design and deployment issues for remote healthcare services.