Introduction to Big-Data on Healthcare Application Minitrack

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The recent confluence of new technologies and data-intensive research methodologies offers a new research platform for interdisciplinary research. High-performance computing, client-cloud architecture, broadband networks, personal devices and sensors, multimedia and multimodal data pervade our society. This creates an unprecedented explosion in data volume in many forms and is often described as "Big Data". The applications of Big Data are important to visualize the social needs and to generate new knowledge for smart decision-making. Social networks, digital behavior, data analytics on health are the typical research areas.

This minitrack broadly covers a variety of research topics on digital health, including mobile platforms and wearable devices applied on health monitoring, artificial intelligence and machine learning application on health data, telemedicine for patient management, impact of environmental and climate changes for health, big-data architecture and cloud computing for health systems, data capturing techniques on personal health records, image processing and voice recognition for data extraction, data analytics on open source health data, data simulation for scenario modeling on health system, and feature selection in genomic data. We aim at providing an international and interdisciplinary forum that is dedicated to explore the Big Data application in healthcare. It also provides an opportunity for current researches that examine large-scale healthcare data with the use of scalable data analytics.

The six papers in this mini-track include studies that: (1) develop novel machine learning model to classify Parkinson's Disease; (2) analyze non-attendance in hospital out-patient appointments with deep learning; (3) assess brain signals to detect alcoholism; and apply data mining techniques to study data of nicotine use and air pollution. The presentations of six papers are arranged in two sessions. The first session focuses on machine learning solutions and data capturing platforms to predict Parkinson's disease and hospital non-attendance. Papers in the second session exhibit some data analytics with application of machine learning models for various types of healthcare data. All papers are competitive to be selected in this meeting, and will serve to illustrate the potentials of big-data research on healthcare application.