Introduction to IT Architectures and Implementations in Healthcare Environments Minitrack

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This year the "IT Architectures and Implementations in Healthcare Environments" minitrack has accepted seven papers.

The paper **Suitability of Fast Healthcare Interoperability Resources (FHIR) for Wellness Data** from New Zealand, explores the sharing of Personal Health Records and individual wellness data across healthcare service providers. They focus on heterogeneities across healthcare systems, offer solutions to the interoperability problem and enable data sharing. The wellness data is supported in healthcare information exchange standards and the FHIR can be used to identify the technical feasibility for manipulating the data. Their conceptual wellness data model is evaluated using FHIR standard.

The paper **Architecture Enabling Service-oriented Digital Biobanks**, comes from Finland and describes their attempts to secure that their Biobank Act enables the utilization of collected biological sample materials for medical research. Their solution supports the collection and management of large sets of data through an architecture that addresses consent and data management and data transfer. It also enables the deployment of service-oriented biobanks for serving research and commercial communities.

The paper **A Sensor-based Learning Public Health System** from the US proposes an architecture of a new type of on-person, public health data collection for public health interventions. The central role is played by a device, which collects data relevant to the individual's health that triggers the receipt of an informational public health intervention, relevant to that individual. The sensor-based public health data collection provides the platform for a new form of learning public health system, which maintains the anonymity of individual participants.

The Paper **Personalized Drug Administration to Patients with Parkinson's Disease: Manipulating Sensor Generated Data in Android Environments** comes from Norway and illustrates the application of a device attached to an Android phone for estimating the severity of Parkinson Disease (PD) symptoms, and performing a personalized drug administration at the moment when the measurement of symptoms is taken. The proposed solutions allows personalization in PD treatment and uses new technologies to bring solutions in the field of drug administration.

The paper **Virtual Articulator – Aid Simulator at Diagnosis, Pre-Surgical Planning and Monitoring of Bucomaxilofacial Treatment** from Brazil, proposes a Virtual Articulator for advances in diagnosing and planning treatments and surgical procedures related to the Temporomandibular Joint (TMJ). It can simulate and reproduce the movements of the TMJ in a realistic way, allow a complete analysis of the problem during the treatment and in future predict the results of the surgical procedure.

The paper **A Lightweight App Distribution Strategy to Generate Interest in Complex Commercial Apps: Case Study of an Automated Wound Measurement System** from the US, demonstrates an innovative approach to point-of-care wound measurement by introducing a free App. It serves as a backbone for a full-featured commercial solution. The authors demonstrate the design process for developing the App, provide an exposition of the scaling algorithm, and discuss the significance of it to the App development.

The paper **Key Performance Indicators across the Perioperative Process: Holistic Opportunities for Improvement via Business Process Management** from the US, examines the development and use of multiple scorecard metrics within the perioperative process to enable business process management practices to measure their continuous improvement. They identify complex relationships within integrated hospital processes to target opportunities for improvement and ultimately yield improved process capabilities. The impact of integrated information systems which identifies, qualifies, and quantifies perioperative improvement is based on a 154-month longitudinal study of a large, 1.046 registered-bed teaching hospital.

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