

MOSIM 2010
May 10-May 12, 2010, Hammamet, Tunisia

Special track on Healthcare Information Systems and Decision Making

CALL FOR PAPERS

Track chairs: Alain Guinet (France) and Nadine Meskens (Belgium)

OBJECTIVES

Hospitals are undergoing large changes, due in part to changes in demography and in part to increased competition among hospitals. These changes have led to a destabilization in the way hospitals usually work and in their economic balance. Hospital managers need to optimize their systems of production to meet the new reality of customers' demands.

We invite researchers and practitioners to present recent advances and new research directions in these domains.

SPECIAL SESSIONS

1. Simulation and Metaheuristics applied to Healthcare Decision Making

In order to meet the new reality of customers' demands, hospital managers need to be increasingly competitive and dynamic. To achieve this goal they must innovate, adapt and optimize their organizations and their production system. The evaluation of the considered systems leads the decision-makers to elaborate more and more complex models that are out of reach of analytical models and also translated into simulation models or need adaptation/simplification. Decision-makers are looking for solutions in a shorter time, for more and more complex problems. Metaheuristics are good alternatives to the exact methods when those reach their limits. Indeed they are able to offer good solutions in a reasonable time. The methods which were developed during the forty last years are applicable to a broad range of problems. Within the context of optimization and simulation of healthcare systems, the objective of this session is to gather original papers dealing with applications of simulation and metaheuristics at one or several decision levels: design, dimensioning, planning, scheduling, reengineering... Submissions describing practical applications (case studies) based on the hybridization/coupling of optimization and simulation are highly recommended.

Session Topics

Researchers and practitioners are invited to submit complete original papers, within the optimization and simulation fields, dealing with (but not limited to) the following topics: evolutionary algorithms, ant colony optimization, swarm intelligence, greedy randomized adaptive search procedures, neural networks, simulated annealing, taboo search, electro-magnetism methods and other hybrid approaches...

Session Chairs

Roux Olivier, LSM/FUCaM, Mons (BE) and **Duvivier** David, LIL, ULCO, Calais (FR)

2. Decision support systems in healthcare processes: Methods and Techniques

Decision support systems are generally defined as any computer program designed to assist professionals in decision making tasks. For instance Clinical decision support systems aim at giving support to clinicians. Management decision support systems can assist managers and administrators to efficiently plan and assign human, physical and financial resources.

Clinical Decision Support Systems are used for managing patient's health. By the enormous amount of data collected about the health status of patients, clinical knowledge is built which can be used in the construction and evaluation of health models, and effective treatment plans. In addition, evaluation of long

term health developments of chronic patients can be used for efficient organization management, including service and human resource managements and cost control.

With the advent of data warehousing techniques and knowledge discovery in large data bases, specific areas of interest may be investigated. Among the key problems are: knowledge representation and the search of the “best” approaches based on machine learning techniques and inference mechanisms which can be used in the healthcare domain. The goal is to find patterns among a collection of data. For example, data mining will enable clinicians and managers to find valuable new patterns in data, leading to potential improvement of resource utilization and patient health.

The aim of this special session is to bring together researchers and interested parties, such as clinicians, managers, and to present and discuss novel approaches to healthcare.

The domains included in this session are Information and communication services for health, Bio signal sensor fusion, and/or feature extraction, Health management systems, Health information systems, Remote monitoring and treatment, Homecare systems, healthcare service tailoring and adaptation, healthcare Service personalization

Session Topics

The topics of the session are Decisional Information systems, Data modelling, Machine learning, Data mining, Stochastic signal analysis

Session Chairs

van Beijnum Bert-Jan, Faculty of Electrical Engineering, Mathematics and Computer Science, University of Twente (NL) and **Combes** Catherine, Computer Science and Image Processing Department, University Jean Monnet de Saint-Etienne (FR).

3. Social Network and Mobile Virtual Communities in Healthcare: Methods and Techniques

Healthcare scenarios usually involve multiple interacting actors, such as patients, clinicians, nurses, therapists and informal caregivers. These actors may interact to pursue some specific objective, for instance to evaluate the health condition of one or more patients, to exchange information about diseases, to plan and effectuate health interventions or treatments, or to provide support among peers. The use of social networks, e-support groups and (mobile) virtual platforms for healthcare evolves in a natural way from these types of scenarios. However, standard platforms do not satisfy the specific requirements that emerge from these healthcare scenarios.

In this special session the focus is on the use of these new evolving community, collaboration and social networking paradigm in the healthcare domain, and in particular on home and mobile healthcare. Home healthcare aims at making independent life possible for longer periods of time, and is seen as a key shift in current practices as to accommodate future care demand and care supply imbalances caused by an aging population in western countries.

This session focuses also on new techniques and methodologies that support the design, implementation and piloting of these new paradigms in home healthcare. The session aims at bringing together researchers and professional user groups, and to present the latest developments in this area.

The domains included in this session are Remote monitoring and treatment, Homecare systems and technologies, Healthcare service tailoring and adaptation, Healthcare service personalization

Session Topics

The topics of the session are Social networks, e-support and (mobile) virtual community platforms, Matchmaking algorithms, Profile information models and profile management

Session Chairs

Maret Pierre, Laboratoire Hubert Curien, University Jean Monnet de Saint-Etienne (FR) and **van Beijnum** Bert-Jan, Faculty of Electrical Engineering, Mathematics and Computer Science, University of Twente (NL)

4. Hospital Resources and Services Management

Hospital environments have changed dramatically over the past two decades. Health care institutions are facing serious challenges: responding to an ever increasing demand and changing demographics, under

economic and political pressures to reduce costs while providing high quality healthcare services. Henceforth, healthcare institutions need to rethink their Decision Making. Hospital Resources and Services are the basic items of this session. The objective is to bring together hospital managers and researchers to exchange ideas in order to face resources and services constraints while satisfying patient requests.

Session Topics

Researchers and practitioners are invited to submit complete original papers dealing with the following topics:

- Hospital resources/operations planning and scheduling
- Capacity planning
- Resources and services organization (centralization, decentralization, pooling, etc.)
- Resources and services management in hospital network
- Case studies and other related issues

Session Chairs

Kharraja Said, LASPI, IUT Roanne, University Jean Monnet de Saint-Etienne (FR)

Jebali Aida, Research Unit « Analyse et Commande des Systèmes », Ecole Nationale d'Ingénieurs de Tunis, University El Manar (TN)

INSTRUCTIONS TO AUTHORS

The authors are requested to submit their draft papers online and select the proper special session on [http:// www.enim.fr/mosim10](http://www.enim.fr/mosim10) before **October 31, 2009**.

Authors are requested to provide a full paper of 10 pages maximum, preferably written in English, according to the instructions and taking account of the reviewer's recommendations. After the reviewing process, the selected papers will be published in the conference proceedings (with ISBN reference number). The extended version of quality papers will be considered for publication in special issues of international journals.

IMPORTANT DEADLINES

Authors will receive the acceptance notification by **January 29, 2010**

Final papers for presentation should be sent before **February 26, 2010**