

EVOLUTIONARY COMPUTATION OF HEALTH CARE SYSTEMS

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DESCRIPTION

Information retrieval is a key technology for knowledge management especially in the medical applications. Information retrieval is concerned with search processes in which an end user needs to identify a subset of information which is relevant for his information need within a large amount of knowledge. The most similar documents are presented to the users who can evaluate the relevance with respect to their problem. The problem to properly represent documents and to match imprecise representations has soon led to the application of techniques developed within Artificial Intelligence to information retrieval.

The more medical knowledge becomes available the more complex the relationships between the data and a potential outcome become. Modern medicine is thus increasingly producing data that can be treated by computers and the types of tests also change quickly over time. The amount of data produced per patient in modern hospitals has increased strongly over the past 30 years as has the amount of medical knowledge published in the scientific literature. Medical imaging is in large part responsible for the data growth as modern tomographic devices produce ever thinner slices and also temporal sequences leading to an explosion of visual data produced. It is estimated that around 30% of world storage capacity is dedicated to medical imaging and that mammography in the United States alone accounted for over 2 Petabytes. Analyzing such large amounts of data now requires computerized tools to remain efficient and particularly good processing infrastructures for computation.

When it comes to the context of Artificial intelligence, machine learning plays a role in many aspects of modern Information Retrieval systems, and deep learning is applied in all of them. The fast pace of modern day research has given rise to many different approaches for different Information Retrieval problems. Search systems today are mostly viewed as tools to satisfy immediate information needs instead of complex information environments in which humans learn while interacting with information content. Research on the design, development and evaluation of search systems that foster learning and enhance the learning experience is scarce. Equally scarce is our current understanding of search as a human learning process. Opportunities exist today to not only observe and interpret users' behavior through the lens of search logs but also to enrich this information with detailed multimodal data streams gathered by tracking devices and sensors.

In this special issue, we aim to provide a forum for researchers who explore the role of search in the learning process to examine challenging research questions, showcase the state-of-the-art and share breakthroughs.

SCOPE

Topics are included but they are not limited to the following:

- ▶ Data Processing in Health Care
- ▶ Evolutionary computation of Health Care Systems
- ▶ Swarm-Based Clustering in Health Care
- ▶ Rehabilitation Engineering in Health Care applications
- ▶ Bioinformatics & Pattern Discovery in Health Care
- ▶ Information Extraction in Health Care
- ▶ Interactive and Online Data Mining in Health Care
- ▶ Machine Learning in Health Care
- ▶ Mining Multimedia Data in Health Care
- ▶ Mining Text and Semi-structured Data in Health Care
- ▶ Pre-processing and Post-processing for Data Mining in Health Care
- ▶ Process Mining in Health Care
- ▶ Structured Data Analysis and Statistical Methods in Health Care
- ▶ Business Intelligence Applications in Health Care
- ▶ User Profiling and Recommender Systems in Health Care
- ▶ Visual Data Mining and Data Visualization in Health Care
- ▶ Web Mining in Health Care
- ▶ Clustering and Classification Methods in Health Care
- ▶ Collaborative Filtering in Health Care applications
- ▶ Concept Mining in Health Care
- ▶ Context Discovery in Health Care
- ▶ Data Analytics in Health Care
- ▶ Data Reduction and Quality Assessment in Health Care systems

HOW TO SUBMIT

Before submission authors should carefully read the Instructions for Authors, which are located here. All submissions to the Special Issue must be made electronically at via online submission system Editorial Manager <https://www.editorialmanager.com/opencs/default.aspx>. When entering your submission via the online submission system please choose the type article **Special Issue on Evolutionary Computation of Health Care Systems**.

Manuscripts can be written in TeX, **LaTeX** (strongly recommended) - the journal's [LATEX template](#). Please note that we do not accept papers in Plain TEX format. Text files can be also submitted as standard DOCUMENT (.DOC), which is acceptable if the submission in LATEX is not possible.

All manuscripts will go through the Open Computer Science high standards, quick, fair and comprehensive peer-review procedure.

IMPORTANT DATES

Submission due date: **August 15, 2020**

Tentative date of publication: **Nov 30, 2020**

WHY SUBMIT

Contributors to the Special Issue will benefit from:

- ▶ **NO submission and publication FEES**
- ▶ indexation by Clarivate Analytics - **Web of Science (ESCI) and Elsevier - SCOPUS**
- ▶ fair and constructive peer review provided by experts in the field
- ▶ **no space constraints**
- ▶ convenient, web-based paper submission and tracking system – Editorial Manager
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We are looking forward to your submission. If you have any questions, don't hesitate to contact the Editorial Office: opencomputerscience@degruyter.com or Beata.Socha@degruyter.com (Managing Editor).