COVID-19 Special Issue: Intelligent Solutions for Computer Communication-Assisted Infectious Disease Diagnosis

COVID-19 (Corona Virus Disease 19) is an infectious disease which is having a significant health and economic impact across the world. The primary source for the transmission of the disease, its detection and treatment methods are still unknown. Hence, a scientific response to this new corona virus is being hampered by a lack of knowledge on how it spreads, possible prevention measures and vaccinations, which all need to be investigated further.

Artificial Intelligence (AI) and computer communication networks have a role to play, especially Machine Learning (ML) due to its learning-from samples capability and applicability over distributed computer systems and networks. Such intelligent techniques have the potential to achieve an effective diagnosis of COVID-19 and similar infectious diseases, potentially surpassing current physicians' capability, according to recent reports, due to their ability to analyze vast numbers of possibilities and exchange findings in real time. Current computer communication infrastructures include smart devices having the sensing and data routing capabilities to communicate with each other using various protocols, potentially allowing disease updates to be accessed anytime from anywhere, and on which innovative ML-powered services could be developed. Due to their advanced technical capabilities, intelligent communication paradigms are making their way into the detection and treatment of COVID-19 and similar diseases: crisis reaction and coordination, open or private infrastructure control, and urban monitoring and treatment systems, are all examples of medical diagnosis areas in which intelligent communication systems may play an important role very soon.

This Special Issue aims to solicit original research which contributes to the state of the art on the application of ML techniques to the problem of computer communication-assisted diagnosis of COVID-19 and similar diseases: we are interested in the latest theoretical developments, real-world applications and future perspectives on this topic. This Special Issue will bring together a broad multidisciplinary Expert Systems community, aiming to integrate ideas, theories, models and techniques from across different disciplines on intelligent solutions/systems, to inform how cognitive systems in Next Generation Networks (NGN) should be designed, developed, and evaluated while exchanging and processing critical health information.

The topics of interests include, but are not limited to:

- Deep Learning for the medical diagnosis of COVID-19 and similar diseases
- Neural Network for medical diagnosis of COVID-19 and similar diseases
- Integration of Image Progressing and ML for medical diagnosis of COVID-19 and similar diseases

▪ Integration of Computer Communication and ML for medical diagnosis of COVID-19 and similar diseases

▪ Use cases of computer-assisted detection systems for COVID-19 and similar diseases

▪ COVID-19 patient care and treatment using ML-oriented systems

▪ Emerging networks solutions for improved medical diagnosis of COVID-19 and similar diseases

▪ Intelligent hardware solutions for medical diagnosis of COVID-19 and similar diseases

▪ Effective use of computer communication and ML for solving open medical problems

▪ Next Generation Networks (NGNs) and ML solutions for medical diagnosis

Please submit your contribution via the online submission systems at https://mc.manuscriptcentral.com/exsy.

SCHEDULE

- End of August 2020: Paper submission deadline.
- End of Oct. 2020: Final notification to authors.

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