



## **IEEE Transactions on Molecular, Biological, and Multi-scale Communications**

*Special Issue on “Advances in Artificial Intelligence and Mathematical Modelling for Epidemic Diseases and Healthcare Applications”*

### **Call for Papers**

As the coronavirus pandemic deepens, there is an urgent need to develop advanced epidemic models that can further improve the efficiency of monitoring, tracking, prevention, control, and treatment. While traditional mathematical modelling methods are considered strong tools to predict the course of COVID-19, healthcare responses are hindered by the lack of standardization, which has prevented universal and coordinated strategies to contain and mitigate the spread of virus. Nonetheless, there are still many challenges, which require researchers in different interdisciplinary areas such as computer science, bioinformatics, epidemiology, and molecular modeling, to work towards cognizing the problem in depth. Artificial intelligence-based models are expected to play a major role in responding to the current and future generations of viruses, which are becoming more complex and much smarter. With the aid of artificial intelligence, there are renewed efforts specifically focusing on machine learning techniques to enhance the computational and data integration capabilities by exploiting many diverse sources of information.

Therefore, the main objective of this special issue is to report on the most recent progress and state-of-the-art investigations on AI-Assisted modeling, including designing, testing, and evaluating, as well as any new standardization initiatives. We specifically seek outstanding work of AI and mathematical modelling that can accurately project the spread of the epidemic, including but not limited to the following topics:

- Advanced AI solutions for epidemic diseases and healthcare applications.
- Advanced mathematical modelling solutions for monitoring and predicting the spread of epidemic diseases.

- Algorithms and tools for epidemic diseases.
- Algorithms and tools for healthcare applications.
- Case studies on AI-aided diagnostics and prognostics.
- Case studies on mathematical models for epidemic monitoring and tracking.
- Standardized solutions for epidemic diseases and healthcare applications.
- Standardize the design, testing, evaluation, and explanation of AI algorithms when applied in healthcare.
- Standardize the design, testing, evaluation, and explanation of mathematical models when applied in healthcare.

### **Important Dates**

**Submission deadline:** Jan 15<sup>th</sup> 2021

**First notification:** March 31<sup>st</sup> 2021

**Acceptance notification:** June 15<sup>th</sup> 2021

**Final manuscript due:** June 30<sup>th</sup> 2021

**Publication date:** Issue 2 2021

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### **News**

T-MBMC is accepted for inclusion in SCOPUS and it is ranked within the top 7% journals in the computer networks and communications category

For further information about T-MBMC, see <http://mbmc.info/> or contact [cbchae@yonsei.ac.kr](mailto:cbchae@yonsei.ac.kr)

