



Journal of Medical Signals and Sensors (JMSS)

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Special issue on Role of Intelligent Computation Optimization Algorithms in Genomics and Precision Medicine

With recent technological breakthroughs, healthcare faces several improvements that might benefit millions of individuals plagued by different chronic conditions. Moreover, introducing the new coronavirus compelled medical facilitators to integrate technological advancements into the healthcare community for better data analytics and monitoring. Furthermore, the integration of genetic data with a knowledge base and intelligent machine algorithms may aid in the detection and interpretation of chronic disorders. The forms of omics data include epigenomics, proteomics, and genomics, which are all utilized to further our understanding of precision medicine. Moreover, precision medicine might be customized by effectively collecting data from the patient's wearable devices, genetic structures, and medical history. Precision medicine enables treatment optimization via multidimensional biological information obtained in conjunction with the patient's surroundings and medical history. Thus, genetic data may offer clinicians the required information for successful disease screening, resulting in accurate and rapid analysis of illness conditions.

Recent advances in intelligent processing models enable multimodal data analytics, geographical data analytics with heterogeneous data, and quantification of ambiguous conclusions. Several challenges that intelligent computing algorithms face in deploying precision medicine in conjunction with genomics include the following: a scarcity of independent data, the black box nature of certain algorithms such as deep neural networks, and the inclusion of bias trade-offs in artificial intelligence intelligent systems.

Moreover, the incorporation of deep learning and fuzzy neural networks into data analytics for precision medicine and genomics data may aid in the creation of novel procedures and medications based on biological data. Further, the effectiveness of illness prediction using existing data sets is shown using machine learning models and artificial intelligence technologies. Thus, multidimensional medical data analytics might be carried out effectively by using the predictive and decision-making skills of medical data analysis to predict and prevent future pandemic diseases.



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This special issue examines unique algorithms for data analytics approaches that use artificial intelligence and machine, learning models. Thus, researchers and biologists might be aware of the need to use intelligent computing approaches to screen and analyze different pandemic illnesses.

Topics of inters:

- Deployment of artificial neural networks in the effective analysis of genomics and precision medicine
- Optimized approach on deep machine learning models for data analytics on genomics and precision medicine
- A novel approach on artificial method strategies for effective precision medicine and genomics data analytics
- Effective data visualization and framework interpretation for genomics data analysis and precision medicine
- Challenges associated with existing data analytics methods for effective genomics data analysis and precision medicine
- Fuzzy neural data analytics approaches to the imbalanced learning algorithms in genomics or precision medicine
- Deployment of convolution neural network in the data prediction and analysis
- Effective computational strategies associated with clinical research and precision medicine
- Deployment of artificial algorithms in the study of neurodevelopmental disorders in children related to genomics
- Effective deployment of machine learning and synthetic computational methods for the enhanced precision medicine



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Important Dates:

- ✓ **Manuscript Submission Deadline: 10th September 2023**
- ✓ **Authors Notification: 20th December 2023**
- ✓ **Revised Papers Due: 30th March 2024**
- ✓ **Final notification: 25th June 2024**

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