

## **J-BHI Special Issue on “Neuro and Fuzzy-Edge Computations for Next-generation Internet of Medical Things”**

With the advent of advanced machine learning techniques, neural networking along with fuzzy logic and other artificial intelligence models evolves as a revolutionary technology in the field of Internet of Things (IoT), Industrial IoT (IIoT), and various smart applications. Nevertheless, the next-generation Internet of Medical Things (Nx-IoMT) arrives as the IoT solutions for smart health and other medical industry applications. Nx-IoMT is made up of various IoMT features along with smart fuzzy-edge and Neuro-edge computing models for human-to-machine and machine-to-human solutions that can be used for remote monitoring and diagnosis with medical guidelines. A given patient's blood pressure, heart rate, oxygen level, body temperature, and other parameters can be monitored remotely and doctor consultations performed. Nx-IoMT will prove to be an efficient solution using various data monitoring, computing and processing power at the edge of networks and/or using cloud-based solutions. Due to various issues, such as limited reach or no cloud connectivity, neural network models and architectures in Nx-IoMT require intelligent edge solutions having the computational capability of pre and post-diagnosis of patients. In these types of cases, the transactional information is stored in edge-based or cloud-based web storage for first-hand and immediate diagnosis on the fly. Neuro-edge models and architectures in Nx-IoMT will stand as a potential solution with efficient and precise computing capabilities of the ubiquitous networking in hospitals and other medical hubs. Conventional smart healthcare systems lack ubiquitous computations while performing remote therapy and treatment. Plenty of research is available related to computing in smart healthcare systems, but more research is required to explore the computational abilities of ubiquitous networks. With an alarming number of patients requiring medical attention globally, proper medical attention remains a big challenge for researchers and medical industries. Therefore, the topical collection proposal will present the Neuro-edge computing for Nx-IoMT applications. The researchers in academics and industries working on these challenges are invited to share their state-of-art, solutions, architecture and models. The topical collections will focus on the recent developments, the outcome in theory and practices. Topics include but are not limited to:

- Neuro-edge models for critical Patient monitoring using Nx-IoMT
- Neural computations techniques for early detections
- Edge and fog computations in IoMT, Nx-IoMT, and its new variants
- Symptoms-based deep prediction computing models
- Machine learning-based solutions for essential communications in remote containment zones
- Ubiquitous Neuro-edge computations for smart sensors awareness
- Neuro-fuzzy models for de-hospitalization and predictive diagnostics
- Ambient intelligence for pre and post medical diagnosis in medical hubs
- Neuro models for data aggregation and customized therapy
- Artificial neural networks for invasive surgical devices
- Neuro-fuzzy Health 4.0 computing models and state-of-art in Nx- IoMT applications
- Neuro-edge sensing, computing and networking for special ICU patients
- Ubiquitous intelligence for risk and early detections in Nx-IoMT
- Neuro-edge sensors for medical imaging in Nx-IoMT
- Data management, integrity and security for Nx-IoMT
- Emergency response systems and maintenance in Nx-IoMT
- Smart sensing and computing models for Personal Protective Equipment (PPE)
- Deep neural computations for crowdsourcing in Nx-IoMT applications
- Ubiquitous sensing in fuzzy edge and Neuro-edge sensors for predictive telemedicine applications
- Information-centric and content-centric networks for Nx-IoMT
- Secure Neuro-edge computations and services for Nx-IoMT

### **Guest Editors**

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### **Key Dates**

- Submission deadline: **September 30<sup>th</sup>, 2021**
- First reviews due: **October 30<sup>th</sup>, 2021**
- Revised manuscript due: **November 30<sup>th</sup>, 2021**
- Final decision: **December 30<sup>th</sup>, 2021**
- Camera-ready version: **January 30<sup>th</sup>, 2022**

