

# IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS

## J-BHI Special Issue on “Role of Embedded Systems in Emerging Biomedical Applications”

In recent years, global population growth demands a better healthcare system with technological advancement to fulfil the needs to a greater extent. Wise health is put forwarding a wide range of biomedical applications on the course action to the universal health management system. For instance, to strengthen the quality of treatment, it is necessary to imply advanced methodologies like embedded systems to improve biomedical applications, which serve as a prerequisite. The essentiality of incorporating the embedded system in healthcare devices is being scrutinised and aids in enhancing healthcare sectors and for a productive life.

Biomedical applications are designed effectively to help in the interlocking mechanism of the bone tissues using a generic category of cold spray technology. Bioactive fluorapatite coatings with bone tissues act as a prosthetic device enabling the growth of the damaged bone tissues. In biomedical applications, embedded system aids in sensing patterns of collecting information about a patient’s health to merge the records to diagnose the problem to make accurate decisions for better treatment through advanced telecommunication technology. Mainly, embedded software and hardware technology are employed with biomedical applications like biomedical power units, movable diagnoses, clinical and biotechnical profilers, ambulatory monitoring, wireless nurse call system, and hospital queue management systems. The most significant role of embedded systems in biomedical applications is defibrillators that assist in monitoring and bringing back the abnormal heartbeat rate to a standard pattern. Additionally, embedded systems are utilised efficiently in varied biomedical applications such as ultrasound imaging, digital flow sensors, MRI, and CT scanner, blood pressure trackers, glucose level monitors, and other wearable devices for fitness tracking. Fetal heart monitoring devices facilitate tracking the pulse rate, glucose level, and blood pressure of the babies during pregnancy, labour, and birthing gain more importance among the medical practitioners in the emerging embedded, biomedical applications.

Besides many reliable benefits in the use of the embedded system in biomedical applications, it also carries a few disadvantages such as backup failures, lack of technological improvement, strict maintenance, etc., which have to be considered. The special issue provides various opportunities to eradicate the challenges and imply different techniques for embedded systems in biomedical applications. Researchers and technologists are invited to present contextual research work in this background.

Topics of interest include, but are not limited to, the following:

- Role of biomedical applications in innovative healthcare sectors
- Implementation of embedded systems in enhancing the medical devices
- Deep learning of telecommunication technology for the efficient utilisation of embedded systems
- Contribution of embedded systems in the medical field for smart healthcare devices
- Limitations and challenges in implying embedded system in biomedical applications
- Biomedical applications: trends and objectives
- Future perspectives in advancing biomedical applications using embedded systems
- Current trends in the embedded system in the enhancement of various sectors
- Embedded systems in the medical field: pros and cons
- Emerging advancement in technology for enhancing medical applications
- Risk factors correlated with embedded systems in healthcare devices
- Role of embedded system in diagnosis and decision making for better treatment

### Guest Editors

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### Key Dates

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