# Special Issue

# AI and Data Science in Bioengineering: Innovations and Applications

## Message from the Guest Editor

This Special Issue highlights the transformative synergy between artificial intelligence, data science, and bioengineering. We showcase cutting-edge applications including: (1) AI-powered medical diagnostics and imaging analysis, (2) machine learning for clinical predictive modeling, (3) intelligent biomaterials design, and (4) data-driven approaches in tissue engineering. The issue also covers computational biology innovations like genomic data analysis, bioprocess optimization through big data analytics, and AI-enhanced bioreactor design. Emerging bioelectronics applications feature prominently, with research on AI-optimized wearable health monitors, smart implantable devices, and neural interface technologies. Translational studies demonstrate how these technologies bridge laboratory research to clinical practice, particularly in rehabilitation engineering and neurotechnology. Key focus areas include:

- AI algorithms for biomedical device development
- Data science in regenerative medicine
- Predictive modeling of cellular processes
- Bioinformatics and synthetic biology applications
- Intelligent systems for bioseparation and bioenergy

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**Editor-in-Chief**

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