

Special Issue

AI-Driven Photonic Biosensors: Revolutionizing Human Behavioral Pattern Detection and Advanced Applications

Message from the Guest Editor

This Special Issue invites contributions that explore how AI-powered systems, such as convolutional neural networks (CNNs), are applied to data from photonic biosensing platforms and imaging technologies like EEG, MRI, and other medical scans, enabling real-time monitoring of cognitive states, including mind-wandering. Leveraging photonic neural networks and waveguide-based biosensors, researchers can achieve unprecedented precision in the non-invasive detection of behavioral and physiological patterns. We seek papers that address the development and application of photonics waveguides for biosensing, focusing on innovations that enhance their integration with AI models for detecting behavioral patterns and analyzing medical imaging data. By combining photonic waveguides with AI-driven techniques, these systems are advancing fields such as neuro-cognitive monitoring, medical diagnostics, and brain-computer interfaces (BCIs), enabling high-sensitivity, real-time biosensing solutions.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Biosensors is a leading journal, devoted to fast publication of the latest achievements, technological developments and scientific research in the exciting multidisciplinary area of biosensors. Both experimental and theoretical papers are published, including all aspects of biosensor design, technology, proof of concept and application. Special issues are devoted to specific technologies and applications, and a selection of the most outstanding papers each year is recognized. Pushing the boundaries of the discipline, we invite original papers, as well as timely reviews on cutting edge fields within the subject area.

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