

Special Issue

Data-Driven and Advanced Signal Processing Approaches for Acoustic and Ultrasonic Sensing

Message from the Guest Editors

Acoustic/vibrational sensors have attracted significant attention for tasks such as noninvasive damage detection, in situ process monitoring, 3D imaging, and material characterization. This is due to the fact that acoustic measurements in both the time and frequency domain are highly sensitive to the material and geometry of their environment, and they possess signatures that are information-rich. A challenging task associated with practical applications is developing methodologies to extract meaningful information from data. This is further augmented by the challenges associated with the generation of large-scale datasets from multiple sensors/sensor streams. Thus, state-of-the-art techniques, both-physics-based and data-driven, are being developed to address the above challenges. This Special Issue covers all topics related to analyzing and interpreting acoustic/vibration measurements by applying advanced signal processing techniques including data-driven techniques such as machine learning and deep learning, as well as physics- or statistics-driven processing techniques.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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