Special Issue

Fault Diagnosis and Prognosis of Mechatronic Systems Using Artificial Intelligence and Estimation Theory

Message from the Guest Editors

Monitoring, diagnostics, and prognostics of the condition of machines and devices are one of the critical areas that must be taken into account during all changes related to the implementation of the Industry 4.0 idea. In particular, obtaining objective diagnostic decisions through the use of artificial intelligence and estimation theory methods and techniques in fault detectors and damage classifiers, as well as in failure prognostic models for mechatronic systems, can facilitate the planning of maintenance and repair inspections of production lines and other devices in industrial plants. It will allow diagnosing and classifying damages of individual elements of these systems in real time at the initial stage of their development, as well as predicting failure development and remaining useful life-time of the failing component/system. Therefore, the purpose of this Special Issue is to present current trends, advanced methods, and innovative technical solutions used in the diagnosis and prognosis of mechatronic systems and their components, with particular regard to artificial intelligence methods: shallow and deep neural networks, fuzzy inference, as well as estimation theory.

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Deadline for manuscript submissions

closed (31 May 2022)

Electronics

an Open Access Journal by MDPI

Impact Factor 2.6
CiteScore 6.1

mdpi.com/si/52070

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guest-edited by leading experts in selected topics of interest.

Editor-in-Chief

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