2020 International Conference on System Science and Engineering (ICSSE 2020)
(http://web.ite.mcu.edu.tw/icsse2020/)
Sunport Hall Takamatsu, Kagawa, Japan, July 5-8, 2020
Workshop on
Reliability Design and Resilient Control of Intelligent Mechatronic Systems

Intelligent Mechatronic Systems (IMS), such as intelligent vehicles/robots/transportation systems, are generally complex due to the integrations of artificial intelligence and multidisciplinary features taken from mechanical engineering, electrical engineering, and control engineering. This integrated complexity leads to challenges in reliability modeling and reliability testing due to different and complex failure modes. To achieve reliability requirements, reliability design and resilient control are critical for the development of IMS. With the advances in information and network techniques, it is opportunistic to exploit them for the benefit of reliability design and the resilient control.

The main focus of this Open Invited Track (OIT) will be on the new techniques in reliability modeling, reliability analysis, reliability design, fault and failure detection, signal processing, and resilient control of IMS. This Focused Section provides a platform to share most recent developments in the fields of reliability design and resilient control. Solicited papers must bring new ideas and approaches, clearly indicating the advances made through problem statements, methodologies with applications to modern complex systems.

Potential topics include, but are not limited to:

- Advanced reliability modeling and identification
- Robust control and filtering issues in IMS
- Intelligent decisions throughout lifecycle
- Failure analysis and prediction methods
- Fault diagnosis and fault tolerant control of IMS
- Health monitoring and supervisory control of IMS
- Risk analysis and management
- Architectural framework of reliability design
- Intelligent and remote fault detection
- Non-fragile and resilient control design
- Artificial intelligence application in IMS
- Design Optimization Using reliability and maintenance Techniques
- Recent developments on model based and data-driven techniques in IMS
- Information constraints and sensor failures for IMS
- Soft computing methods for fault detection and isolation (FDI) of IMS
- Soft computing methods for fault tolerant control (FTC) of IMS
- Soft computing methods in instrumentation and signal processing of IMS
- Big data solutions with complex system applications;
- Application studies

Committees:
General Chair:
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Kalyana C. Veluvolu, Kyungpook National University, South Korea
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Yuanqing Wu, Guangdong University of Technology, China

Important Dates:
Submission Due: March 31, 2020
Notification of Acceptance: May 15, 2020
Final Due: June 1, 2020