



IEEE
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IEEE International Conference on Systems, Man, and Cybernetics (SMC)
Toronto, Canada, Oct 11-14, 2020

Call for Papers

Special Session on

Fault-Tolerant and Attack-Resilient Cyber-Physical Systems

The welfare and security of modern societies rely on the safe and secure operation of Cyber-Physical Systems (CPS). The existence of the communication links has widened the attack surface. This increases the range of possible problems that cannot be properly addressed, unless under a unified view of safety and security characteristics. This session is intended to include research papers focusing on the development of methodologies for detecting, preventing, and diagnosing faults and attacks that would pave the way together towards fault-tolerant attack-resilient CPS. CPS have growing real-world applications such as smart grids, autonomous vehicles, and intelligent robots. The CPS are usually complex due to the integrity of various physical and cyber agents taken from various engineering domains including mechanical, electrical, computer, industrial and control. This integration results in various challenges on the reliability design and modelling, condition monitoring, diagnostic, prognostics, and security analysis due to occurrence of faults and attacks. Hence, in order to maintain the safe and secure operation of CPS, the fault-tolerant and attack-resilient design is of paramount importance.

The aim of this special session is to provide a forum for researchers and engineers to discuss on how to develop condition monitoring, diagnostics and resilient control strategies that can be implemented on CPS considering uncertainties, measurement noises, and finite online computation time of the control signal to behave safe and secure with an acceptable performance in the presence of faults/attacks. The session aims to cover novel data-driven, model-based and intelligent approaches and their applications.

Organizers:

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Submission Procedure: Submitted papers should not have been previously published or be under consideration for publication elsewhere at the time of its submission. The papers should be submitted to PaperCept <https://conf.papercept.net/conferences/scripts/start.pl> and should follow its standard formats. Authors should submit the paper through the system under cybernetics special sessions in “Fault-Tolerant and Attack-Resilient Cyber-Physical Systems” using the “vteu8” code. Also, please send a copy of the abstract by email to the special session organizers by April 30 (extended until May 15). In case of further details, contact the organizers.