Special Issue

Robust Fault-Tolerant Controllers for Unmanned Aircraft Vehicles

Message from the Guest Editor

There are many methods for designing robust controllers for UAVs. However, there are not many methods for designing fault-tolerant and safe UAV controllers. Some controllers are developed using finite-state machines (FSMs) and implemented in field-programmable gate arrays (FPGAs). At the same time, there are no methods for designing UAV controllers implemented on a system on a chip (SoC). The reliability and fault-tolerance problems of UAV controllers can be addressed at various levels: algorithmic, structural, functional–logical, and at the level of hardware description language (HDL). The speed and functional power of UAV controllers can be increased by implementing them in FPGAs and SoCs rather than microprocessors and microcontrollers. The following tasks are considered promising in the development of UAV controllers: obstacle avoidance, evasion of attacks by other drones, countering cyberattacks, neutralizing or mitigating external disturbances, switching to autonomous control in the event of external disturbances, using machine learning and swarm intelligence, and integration with artificial intelligence.

Guest Editor

Prof. Dr. Valery Salauyou
Faculty of Computer Science, Bialystok University of Technology, 15-351 Bialystok, Poland

Deadline for manuscript submissions

20 June 2026

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/si/263144

Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
applsci@mdpi.com

mdpi.com/journal/applsci

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/journal/applsci

MDPI

About the Journal

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, Inspec, Embase, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q2 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)