



Submission deadline–28th February 2023



Call for Papers

Special Issue on

Security and Safety in Unmanned Systems

Guest Editors:

- **Jian SUN**- Beijing Institute of Technology, China
- **Youmin ZHANG**- Concordia University, Canada
- **Hong CHEN**- Tongji University, China
- **Mou CHEN**- Nanjing University of Aeronautics and Astronautics, China
- **Qinglei HU**- Beihang University, China

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Background

Unmanned systems are machines or devices that are equipped with necessary data processing units, sensors, control, communication and computation systems, including unmanned aircraft, ground mobile robots/vehicles, surface/underwater vehicles, satellites, and other unconventional structures. Since the first flight of an unmanned aircraft in 1916, unmanned systems have attracted a lot of attention and have been applied to numerous fields with various functions and different uses thanks to the capability of performing missions autonomously without human intervention. Simultaneously, the development of unmanned system technology is associated with vulnerabilities and threats, and the widespread application process is accompanied by a number of issues and accidents, which pose challenges for industry, academia, and government.

Aims and Scope of the Special Issue

As the world's first innovative journal focusing on the intersection of cyber security and functional safety, *Security and Safety* (S&S) hereby calls for papers to this special issue “*Security and Safety in Unmanned Systems*”. The purpose is to provide a venue for new contributions on security and safety in unmanned systems, including theoretical studies, practical applications and related new techniques. All submitted papers will be reviewed by the editor and sent to at least three independent referees for single-blind peer review and selected on the basis of both their quality and their relevance to the theme of this special issue.

This special issue welcome papers on topics that include but are not limited to:

- Attack modeling for unmanned systems
- Attack detection for unmanned systems
- Vulnerability analysis for unmanned systems
- Data security and privacy for unmanned systems
- Model-based and/or data-driven secure state estimation for unmanned systems
- Robust control of unmanned systems accounting for inherent uncertainties
- Resilient control of unmanned systems under external attacks
- Distributed robust/resilient control of networked unmanned systems
- AI-based security algorithms and mechanisms for unmanned systems
- Experimental evaluation for security and safety of unmanned systems

Submissions

Authors should submit their manuscripts online directly at: <https://sands.nestor-edp.org> and choose, during submission, the special issue: **Security and Safety in Unmanned Systems**. All relevant papers will be carefully considered and peer-reviewed by a distinguished team of international experts. The instructions for authors are detailed at: <https://sands.edpsciences.org/author-information/instructions-for-authors>.

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Article Processing Charges - S&S is an Open Access journal and no APCs in 2023.

Recommendation Editor - **Jie CHEN**, Tongji University, China

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Guest Editor Biographies



Jian SUN received the Bachelor's degree from the Department of Automation and Electric Engineering, Jilin Institute of Technology, in 2001, the master's degree from the Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences (CAS), in 2004, and the Ph.D. degree from the Institute of Automation, CAS, in 2007. He was a Research Fellow with the Faculty of Advanced Technology, University of Glamorgan, Pontypridd, U.K., from 2008 to 2009. He was a Post-Doctoral Research Fellow with the Beijing Institute of Technology, from 2007 to 2010. In 2010, he joined the School of Automation, Beijing Institute of Technology, where he has been a Professor since 2013. His current research interests include networked control systems, time-delay systems, and security of cyber-physical systems. Dr. Sun is an Editorial Board Member of the *Journal of Systems Science & Complexity*, *Acta Automatica Sinica* and *Security and Safety*.



Youmin ZHANG (Fellow, IEEE and CSME) is currently a Professor at the Department of Mechanical, Industrial and Aerospace Engineering and the Concordia Institute of Aerospace Design and Innovation (CIADI) at Concordia University, Canada. His main research interests and experience are in the areas of condition monitoring, health management, fault/attack diagnosis and fault/attack-tolerant control systems; cooperative guidance, navigation and control of unmanned aerial/space/ground/marine vehicles with applications to forest fires, pipelines, power lines, wind farms, solar panels arrays, environment, natural resources and natural disasters monitoring, detection, and protection by combining with remote sensing techniques; dynamic systems modeling, estimation, identification and advanced control techniques; and advanced signal processing techniques for diagnosis, prognosis, fault/attack-tolerant and health management of safety-critical and security-critical systems with application to smart grids, smart cities, and cyber-physical systems *etc.*



Hong CHEN (Fellow, IEEE) received the B.S. and M.S. degrees in Process Control from Zhejiang University, Hangzhou, China, in 1983 and 1986, respectively, and the Ph.D. degree in System Dynamics and Control Engineering from the University of Stuttgart, Stuttgart, Germany, in 1997. In 1986, she joined the Jilin University of Technology, Changchun, China. From 1993 to 1997, she was a Wissenschaftlicher Mitarbeiter with the Institut fuer Systemdynamik und Regelungstechnik, University of Stuttgart. Since 1999, she has been a Professor with Jilin University, Changchun, and hereafter a Tang Aoqing Professor. From 2015 to 2019, she served as the Director of the State Key Laboratory of Automotive Simulation and Control, Jilin University. She currently joins Tongji University, Shanghai, China, as a Distinguished Professor. Her current research interests include model predictive control, nonlinear control, and applications in mechatronic systems focusing on automotive systems.



Mou CHEN, (Senior Member, IEEE) received the B.S. degree in Material Science and Engineering and the Ph.D. degree in control theory and control engineering from the Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, China, in 1998 and 2004, respectively. He was an Academic Visitor with the Department of Aeronautical and Automotive Engineering, Loughborough University, Loughborough, U.K., from November 2007 to February 2008. From June 2008 to September 2009, he was a Research Fellow with the Department of Electrical and Computer Engineering, National University of Singapore, Singapore. He was a Senior Academic Visitor with the School of Electrical and Electronic Engineering, The University of Adelaide, Adelaide, SA, Australia, in 2014, for six months. He is currently a Full Professor with the College of Automation Engineering, NUAA. His current research interests include nonlinear system control, intelligent control, and flight control.



Qinglei HU (Senior Member, IEEE) received the B.Eng. degree in Electrical and Electronic Engineering from Zhengzhou University, Zhengzhou, China, in 2001, and the Ph.D. degree, with the specialization in guidance and control, in control science and engineering from the Harbin Institute of Technology, Harbin, China, in 2006. From 2003 to 2014, he was with the Department of Control Science and Engineering, Harbin Institute of Technology, and then he joined Beihang University, Beijing, China, in 2014, as a Full Professor. His current research interests include variable structure control and applications, and fault-tolerant control and applications. In these areas, he has authored or coauthored more than 80 technical papers. Prof. Hu serves as an Associate Editor for Aerospace Science and Technology.