Name	Ihor Kliushnikov
Position, Department/Faculty	Associate professor, Department of Computer Systems, Networks and Cybersecurity, Faculty of Radio Electronics, Computer Systems, and Infocommunications
Academic Degree, Academic Title	Candidate of Technical Sciences, Senior Researcher
Email:	i.kliushnikov@csn.khai.edu
Scopus Author ID:	57218092653
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ORCID iD:	0000-0001-9419-7825
Google Scholar:	https://scholar.google.com/citations?view_op=list_works&hl=ru&user=CLf4CIcAAAAJ
ResearchGate:	https://www.researchgate.net/profile/Ihor-Kliushnikov

EDUCATION:

Basic education (university, major, year of graduation):

Kharkiv Military University, Educationally-qualifying level – Specialist in Automated Control Systems (qualification – Cybernetics Engineer), 1995.

Postgraduate/Doctoral studies:

1. Kharkiv Military University, Candidate of Technical Sciences (PhD), 2003.
2. National Aerospace University "Kharkiv Aviation Institute", Doctoral student, 2022.

Additional training, certification programs:

Certificate Jean Monnet Module "European integration of Ukraine in Industry 4.0", 2021.
Certificate "TEACHERS' SMARTUP" course by Sigma Software University. Partner of the course - IT Ukraine Association, 2023.
Certificate SoftServe Academy course "Cloud environment configuration and security", 2024.

WORK EXPERIENCE:

Professional Career (Workplace, Years, Position):

1. September 2000 - August 2003 - Kharkiv Military University, Post-Graduate Student.
2. March 2004 - August 2005 - Kharkiv Institute of Air Force, Lecturer.
3. September 2005 - August 2007 - Kharkiv National University of Air Force, Deputy of head of department.
4. September 2007 - August 2012 – Scientific Center of Kharkiv National University of Air Force, Senior Researcher.
5. September 2012 - September 2018 – Scientific Center of Kharkiv National University of Air Force, Head of R&D department.

6. September 2018 - August 2020 – Scientific Center of Kharkiv National University of Air Force, Lead Researcher.
7. September 2020 - August 2020 - National Aerospace University "Kharkiv aviation institute", Doctoral Student in Engineering, Associate Professor of the Department of Computer Systems, Networks and Cybersecurity.
8. September 2022 - till now - National Aerospace University "Kharkiv aviation institute", Associate Professor of the Department of Computer Systems, Networks and Cybersecurity.

Teaching Experience:
September 2003 – August 2007 - Lecturer (Kharkiv National University of Air Force).
September 2020 – till now – Associate Professor (National Aerospace University "Kharkiv aviation institute").

Experience in International or National Projects:
A. International Projects:
1. AutoDroneUA project (PR758743 4500639807, National Aerospace University "Kharkiv Aviation Institute" and Fraunhofer Institute for Factory Operation and Automation) (2024).
B. National Projects:
B.1 Project participant:
1. Scientific basis and methods of ensuring the dependability of UAV fleets of intelligent monitoring systems for potentially dangerous and military objects (0121U112172, 2021-2023).
2. Technologies, means of mathematical modeling, optimization and system analysis of coverage problems in space monitoring systems (0122U200468, 2022-2024).
B.2 Responsible project executor:
1. Methodology and information technologies for assessing and ensuring the safety of digital infrastructure of small modular reactors (0122U000977, 2022-2024).
2. Methods and means of explosive objects detection using multifunctional intelligent UAV systems (0123U101992, 2023-2024).

RESEARCH ACTIVITIES:

Main Research Areas:
Dependability of unmanned intelligent systems, cybersecurity incident response, intelligent mobile systems, multiagent systems.

Number of Publications (Scopus, WoS, others):
More than 190 scientific publications (Scopus – 20, WoS – 6)

Monographs, Textbooks:
Modern weapons and military equipment of the Armed Forces of the russian federation. Handbook of the Joint Forces Participant / [S. P. Korniychuk, O. V. Turinsky, G. V. Pevtsov, I. M. Kliushnikov etc.]; ed. by S. P. Korniychuk. Kharkiv.: DISA PLUS, 2020. 1220 p.

Participation in Scientific Conferences:
1. IEEE International Conference on Dependable Systems, Services and Technologies (DESSERT).
2. International Conference on ICT in Education, Research, and Industrial Applications (ICTERI).
3. International Conference on Information and Digital Technologies (IDT).

4. International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS).
5. Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering (TCSET).

TEACHING ACTIVITIES:

Courses Taught:
Mobile programming, AI for cybersecurity, Cybersecurity of mobile systems, Functional safety and dependability of computer systems.

Author Courses, Academic Programs:
Mobile programming, AI for cybersecurity, Cybersecurity of mobile systems.

GRANTS AND PROJECTS:

Participation in International and National Projects:
A. International Projects:
AutoDroneUA project (PR758743 4500639807, National Aerospace University "Kharkiv Aviation Institute" and Fraunhofer Institute for Factory Operation and Automation) (2024).
B. National Projects:
B.1 Project participant:
1. Scientific basis and methods of ensuring the dependability of UAV fleets of intelligent monitoring systems for potentially dangerous and military objects (0121U112172, 2021-2023);
2. Technologies, means of mathematical modeling, optimization and system analysis of coverage problems in space monitoring systems (0122U200468, 2022-2024).
B.2 Responsible project executor:
1. Methodological fundamentals and technologies for assessing and ensuring the safety (protection) of critical information infrastructures (0119U100979, 2029-2021);
2. Methods and means of explosive objects detection using multifunctional intelligent UAV systems (0123U101992, 2023-2024).

PROFESSIONAL ACHIEVEMENTS AND AWARDS:

Membership in Professional Associations:
Member of the public organization "Ukrainian Scientific and Educational IT Society".

INTERNATIONAL ACTIVITIES:

Cooperation with Foreign Universities:
1. Fraunhofer Institute for Factory Operation and Automation (Germany).
2. KTH Royal Institute of Technology (Sweden).

Teaching/Lecturing Abroad:
Technical University of Applied Sciences, Wildau.

SELECTED PUBLICATIONS:

Key Articles (Scopus, WoS, others):

1. Kliushnikov I. M., Fesenko H. V., Kharchenko V. S. Scheduling UAV fleets for the persistent operation of UAV-enabled wireless networks during NPP monitoring. Радіоелектронні і комп'ютерні системи. 2020. № 1 (93). С. 29–36. https://doi.org/10.32620/reks.2020.1.03.
2. Fesenko H., Kliushnikov I., Kharchenko V., Rudakov S., Odarushchenko E. Routing an unmanned aerial vehicle during NPP monitoring in the presence of an automatic battery replacement aerial system. Dependable Systems, Services and Technologies (DESSERT'2020) : Proc. 11th IEEE Int. Conf., Kyiv, Ukraine, May 14–18, 2020. P. 34–39. https://doi.org/10.1109/DESSERT50317.2020.9125080.
3. Kliushnikov I., Fesenko H., Kharchenko V., Illiashenko O., Morozova O. UAV fleet based accident monitoring systems with automatic battery replacement systems: Algorithms for justifying composition and use planning. International Journal of Safety and Security Engineering. 2021. Vol. 11, No. 4. P. 319-328. https://doi.org/10.18280/ijsse.110404.
4. Kliushnikov I., Kharchenko V., Fesenko H., Zaitseva E. Multi-UAV Routing for Critical Iinfrastructure Monitoring Considering Failures of UAVs : Reliability Models, Rerouting Algorithms, Industrial Case. Information and Digital Technologies (IDT'2021) : Proc. 2021 IEEE Int. Conf., Zilina, Slovakia, 2021, pp. 303–310. https://doi.org/ 10.1109/IDT52577.2021.9497624.
5. Kharchenko V., Kliushnikov I., Rucinski A., Fesenko H., Illiashenko O. UAV Fleet as a Dependable Service for Smart Cities: Model-Based Assessment and Application. Smart Cities. 2022. Vol. 5. iss. 3. P.1151–1178. https://doi.org/10.3390/smartcities5030058.
6. Sun Y., Fesenko H., Kharchenko V., Zhong L., Kliushnikov I., Illiashenko O., Morozova O., Sachenko A. UAV and IoT-Based Systems for the Monitoring of Industrial Facilities Using Digital Twins: Methodology, Reliability Models, and Application. Sensors. 2022. Vol. 22, iss. 17, article no. 6444. P.1–31. https://doi.org/10.3390/s22176444.
7. Kliushnikov I., Kharchenko V., Fesenko H. An Unmanned Aerial Vehicle as a Multi-State System. Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering (TCSET'2022): Proc. 16th IEEE Int. Conf., Lviv-Slavske, Ukraine, Feb. 22–26, 2022. P. 291–296. https://doi.org/10.1109/TCSET55632.2022.9766951.
8. Fesenko, H., Illiashenko, O., Kharchenko, V., Kliushnikov I., Morozova O., Sachenko A., Skorobohatko S. Flying Sensor and Edge Network-Based Advanced Air Mobility Systems: Reliability Analysis and Applications for Urban Monitoring. Drones. 2023. Vol. 7, no. 7, article no. 409. P. 1–27. https://doi.org/ 10.3390/drones7070409.
9. Kliushnikov I., Kharchenko V., Fesenko H., Zaitseva E., Levashenko V. Reliability Models of Multi-state UAV-based Monitoring Systems: Mission Efficiency Degradation Issues. Information and Digital Technologies (IDT'2023) : Proc. 2023 IEEE Int. Conf., Zilina, Slovakia, Jun. 20–22, 2023. P. 299–306. https://doi.org/10.1109/IDT59031.2023.10194443.
10. Kliushnikov I., Kharchenko V., Cherepnov I., Morozova O., Rudakov S., Kompaniiets O. Structural-Parametric Synthesis of Multi-Agent UAV-based SMR Monitoring system: an Ontology Approach. Dependable Systems, Services and Technologies (DESSERT'2023) : Proc. 13th IEEE Int. Conf., Athens, Greece, Oct. 13-15, 2023. P. 1–7. https://doi.org/10.1109/DESSERT61349.2023.10416509.
11. Fedorenko G., Fesenko H., Kharchenko V., Kliushnikov I., Tolkunov I. Robotic-biological systems for detection and identification of explosive ordnance: concept, general structure, and models. Radioelectronic and Computer Systems. 2023. No. 2(106). P. 143–159.

https://doi.org/10.32620/reks.2023.2.12.
12. Zheng Y., Shcherbakova G., Rusyn B., Sachenko A., Volkova N., Kliushnikov I., Antoshchuk S. Wavelet Transform Cluster Analysis of UAV Images for Sustainable Development of Smart Regions Due to Inspecting Transport Infrastructure. Sustainability. 2025. Vol. 17. Iss. 3. article no. 927. P.1-27. https://doi.org/10.3390/su17030927.

Books, Chapters in Collective Monographs:

1. Fesenko H., Kliushnikov I. NPP monitoring missions via a multi-fleet of drones: Reliability issues. *Cyber Security and Safety of Nuclear Power Plant Instrumentation and Control Systems* : collective monograph / ed. by M. Yastrebenetsky, V. Kharchenko. Hershey, PA, USA : IGI Global, 2020. Chapter 17. P. 458–473. https://doi.org/10.4018/978-1-7998-3277-5.ch017.
2. Kliushnikov I., Kharchenko V. Fesenko H. UAV Fleet Routing with Battery Recharging for Nuclear Power Plant Monitoring Considering UAV Failures. ICTERI 2021 Workshops. ICTERI 2021. Communications in Computer and Information Science : collective monograph / ed. by O. Ignatenko, V. Kharchenko, V. Kobets, H. Kravtsov, Yu. Tarasich, V. Ermolayev. Cham, Switzerland: Springer, 2022. Vol. 1635. P. 442–454. https://doi.org/10.1007/978-3-031-14841-5_29.
3. Kliushnikov I., Kharchenko V., Fesenko H., Leontiiev K., Illiashenko O. UAV Fleet with Battery Recharging for NPP Monitoring: Queuing System and Routing Based Reliability Models. New Advances in Dependability of Networks and Systems. DepCoS-RELCOMEX 2022. Lecture Notes in Networks and Systems : collective monograph / ed. by Zamojski W., Mazurkiewicz J., Sugier J., Walkowiak T., Kacprzyk J. at al. Cham, Switzerland: Springer, 2022. Vol 484. P. 109–119. https://doi.org/10.1007/978-3-031-06746-4_11.

Links to Citation Database Profiles:

Scopus authors: https://www.scopus.com/authid/detail.uri?authorId=57218092653
Web of Science: https://www.webofscience.com/wos/author/record/JAO-2927-2023
ORCID: https://orcid.org/0000-0001-9419-7825
Google Scholar:
https://scholar.google.com/citations?view_op=list_works&hl=ru&user=CLf4CIcAAAAJ
ResearchGate: https://www.researchgate.net/profile/Ihor-Kliushnikov

ADDITIONAL INFORMATION:

Language Proficiency:
Ukrainian, English

IT Skills:
Operation Systems: Windows, Linux.
Programming Languages: Kotlin, SPARQL.
Mathematical Programs: MatLab, MatCad.
Learning Platform: Moodle, Mentor.
Technologies: Neural Network, IoT, Machine learning, Mobile programming.

Social and Community Activities:
Member of the public organization "Ukrainian Scientific and Educational IT Society".