



<b>Name</b>	Oleksandr Orekhov
<b>Position, Department/Faculty</b>	Professor, Deputy Head of Department for Educational and Methodological Work; Department of Computer Systems, Networks, and Cybersecurity; Faculty of Radio-Electronics, Computer Systems and Infocommunications
<b>Academic Degree, Academic Title</b>	Candidate of Technical Sciences (PhD), Professor
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<b>ResearchGate:</b>	<a href="https://www.researchgate.net/profile/Alexandr-Orekhov">https://www.researchgate.net/profile/Alexandr-Orekhov</a>

## EDUCATION:

### Basic education:

National Aerospace University "Kharkiv Aviation Institute", Master of Science Degree in Radioelectronic Equipment, 1974

### Postgraduate/Doctoral studies:

National Aerospace University "Kharkiv Aviation Institute", Candidate of Technical Sciences (PhD), 1982.

### Additional training, certification programs:

1. Certificate "Development Business Silverlight Applications", course by Microsoft Innovation Center, 2010.
2. Certificate "English for Academic Purposes and Professional Communication", course by National Aerospace University, 2011.

## WORK EXPERIENCE:

### Professional Career:

1. March 1974 – December 1979 – Computing Center, National Aerospace University "Kharkiv Aviation Institute", Mathematician-Programmer
2. December 1983 – May 1985 – National Aerospace University "Kharkiv Aviation Institute", Assistant
3. May 1985 – November 1992 – National Aerospace University "Kharkiv Aviation Institute", Senior Lecturer
4. November 1992 – August 2013 – National Aerospace University "Kharkiv Aviation Institute", Associate Professor
5. August 2013 – till now – National Aerospace University "Kharkiv Aviation Institute", Professor.

### **Teaching Experience:**

1. National Aerospace University "Kharkiv Aviation Institute", 1983-1985, Assistant
2. National Aerospace University "Kharkiv Aviation Institute", 1985-1992, Senior Lecturer
3. National Aerospace University "Kharkiv Aviation Institute", 1992-2013, Associate Professor
4. National Aerospace University "Kharkiv Aviation Institute", 2013- till now, Professor

### **Experience in International or National Projects:**

Involved in over 5 international and national projects.

## **RESEARCH ACTIVITIES:**

### **Main Research Areas:**

Software Quality, Internet of Things, Green Technologies, Critical Computing, Ecosystems Monitoring, UI/UX, Augmented Reality.

### **Number of Publications:**

More than 40 scientific publishes, including 8 in SCOPUS.

### **Monographs, Textbooks:**

Author and co-author of more than 7 textbooks and monographs.

### **Participation in Scientific Conferences:**

Participated in the IEEE international Conference of Intelligent Data Acquisition and Advanced computing Systems (IDAACS), Integrated Computer Technologies in Mechanical Engineering (ICTM), International Conference on Digital Technologies (IDT) and other high-level conferences. Regularly attend the seminars Critical Computer Technologies and Systems (CriCTecS) and Dependable Information Technologies.

## **TEACHING ACTIVITIES:**

### **Courses Taught:**

1. Software Systems Design Technologies
2. Quality Assurance Technologies of Critical Software and Systems

### **Author Courses, Academic Programs:**

1. Fundamentals of Translation (Compilation)
2. Assembly Language
3. High-Level Programming Languages
4. Web Programming
5. Fundamentals of Microprocessors
6. Software Systems Design Technologies
7. Quality Assurance Technologies of Critical Software and Systems

### **Methodological Materials, Textbooks:**

1. Babeshko, E. V., Zheltukhin, A. V., Kulanov, V. A., Mazurenko, A. V., Mpando, P., Orekhov, A. A., Kharchenko, V. S., & Yanovsky, M. E. (2008). *Design of Embedded Systems on STMicroelectronics Microcontrollers* (V. S. Kharchenko & A. A. Orekhov, Eds.). Kharkiv: National Aerospace University "KhAI". 201 p.
2. Orekhov, O. O., & Boyarchuk, A. V. (2013). *Web-Programming: Lecture Course. Educational*

*and Methodological Manual*. Ministry of Education and Science of Ukraine, National Aerospace University "KhAI". 65 p. [Electronic resource].

3. Kharchenko, V. S. (Ed.). (2014). *Green IT Engineering. In 2 Volumes. Vol. 2: Systems, Industry, Society. Lecture Materials*. Ministry of Education and Science of Ukraine, National Aerospace University "KhAI". 688 p.
4. Kharchenko, V. S. (Ed.). (2016). *Green Sensor Networks and Microcontroller Systems: Methods and Tools for Research and Development. Training Manual*. Ministry of Education and Science of Ukraine, National Aerospace University "KhAI", Kharkiv. 160 p.
5. Sachenko, A. O., Kochan, V. V., Bykovyy, P. Y., Zahorodnia, D. I., Osolinsky, O. R., Skarga-Bandurova, I. S., Derkach, M. V., Orekhov, O. O., Stadnik, A. O., Kharchenko, V. S., & Fesenko, H. V. (2019). *Internet of Things for Intelligent Transport Systems: Practicum* (A. O. Sachenko, Ed.). Ministry of Education and Science of Ukraine, Ternopil National Economic University, Volodymyr Dahl East Ukrainian National University, National Aerospace University "Kharkiv Aviation Institute". 135 p.
6. Stadnyk, A. O., Orekhov, O. O., Kharchenko, V. S., & Kanarskyi, Y. O. (2024). *Augmented Reality Technologies: Laboratory Manual* [Electronic resource]. Kharkiv: National Aerospace University "Kharkiv Aviation Institute" named after M. Zhukovsky. 88 p.

## GRANTS AND PROJECTS:

### Participation in International and National Projects:

1. National Safeware Engineering Network of Centres of Innovative Academia-Industry Handshaking SAFEGUARD (158886-2009-UK-JPCR)
2. Green Computing & Communications / GREENCO (530270-TEMPUS-1-2012-1-UK-TEMPUS-JPCR)
3. Modernization of Postgraduate Studies on Security and Resilience for Human and Industry Related Domains SEREIN (543968-TEMPUS-1-2013-1-EE-TEMPUS-JPCR)
4. Internet of Things: Emerging Curriculum for Industry and Human Applications ALIOT (573818-EPP-1-2016-1-UK-EPPKA2-CBHE-JP)
5. WILDFire preparedness and prevention framework for unmanned vehicle platforms "WILDCAT"

### Grants, Scholarships, Academic Mobility Programs:

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## PROFESSIONAL ACHIEVEMENTS AND AWARDS:

### Honorary Titles:

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### Distinctions, Awards, Prizes:

Awarded a Certificate of Appreciation from the Kharkiv City Mayor in 2019 and an Honorary Diploma from the Executive Committee of the Kharkiv City Council in 2009.

### Membership in Professional Associations:

Member of the public organization "Ukrainian Scientific and Educational IT Society."

## INTERNATIONAL ACTIVITIES:

### Internships:



In 2010, received a certificate from the Microsoft Innovation Center authorizing the teaching of the course "Development Business Silverlight Applications." In 2011, obtained a certificate in "English for Academic Purposes and Professional Communication" from the National Aerospace University, granting the right to teach foreign students in English.

#### **Cooperation with Foreign Universities:**

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#### **Teaching/Lecturing Abroad:**

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### **SELECTED PUBLICATIONS:**

#### **Key Articles (Scopus, WoS, others):**

1. Kharchenko, V., Orekhova, A., & Orekhov, A. (2014). Human-machine interface quality assessment techniques: Green and safety issues. The 10th International Conference on Digital Technologies, Žilina, Slovakia, pp. 248–254. <https://doi.org/10.1109/DT.2014.6868723>
2. Orekhov, A., Stadnik, A., Kharchenko, V. (2019). Cooperative Ecology Human–Machine Interfaces for Safe Intelligent Transport Systems: Cloud-Based Software Case. *Studies in Systems, Decision and Control*, vol. 171, pp. 449-468. SCOPUS. [https://doi.org/10.1007/978-3-030-00253-4\\_19](https://doi.org/10.1007/978-3-030-00253-4_19)
3. Polozhyi, D., & Orekhov, A. (2020). Application architectures: analyzing cloud compatibility and scalability. In *Integrated Computer Technologies in Mechanical Engineering – Synergetic Engineering (ICTM-2020)*, Kharkiv, Ukraine, pp. 14–17.
4. Chernetskyi, B., Kharchenko, V., Orehov, A. (2022). Wireless Sensor Network based Forest Fire Early Detection Systems: Development and Implementation. *International Journal of Computing*, vol. 21(1), pp. 92-99. SCOPUS. <https://doi.org/10.47839/ijc.21.1.2522>
5. Kanarskyi, Y., Orehov, O., Stadnyk, A. (2022). Assessing the quality of an augmented reality system: an analysis of the state of research. *Control, navigation and communication systems*, vol. 70 (4), pp. 79-87. <https://doi.org/10.26906/SUNZ.2022.4.079>
6. Polozhyi, D., Oriekhov, O. (2023). Intelligent automotive security systems based on cloud architectures. *Control, navigation and communication systems*, vol. 74 (4), pp. 91-95. <https://doi.org/10.26906/SUNZ.2023.4.091>
7. Polozhyi, D., Oriekhov, O. (2024). Simulation of communication quality in the vehicle its network. *Control, navigation and communication systems*, vol. 75 (1), pp. 152-157. <https://doi.org/10.26906/SUNZ.2024.1.152>
8. Popov, S., Oriekhov, O. (2024). Methods and hardware and software for information processing in intelligent forest fire monitoring systems based on UAV swarms. *Control, navigation and communication systems*, vol. 78 (4), pp. 123-131. <https://doi.org/10.26906/SUNZ.2024.4.123>

#### **Books, Chapters in Collective Monographs:**

1. Babeshko, E. V., Zheltukhin, A. V., Kulanov, V. A., Mazurenko, A. V., Mpando, P., Orekhov, A. A., Kharchenko, V. S., & Yanovsky, M. E. (2008). *Design of Embedded Systems on STMicroelectronics Microcontrollers* (V. S. Kharchenko & A. A. Orekhov, Eds.). Kharkiv: National Aerospace University "KhAI". 201 p.
2. Orekhov, O. O., & Boyarchuk, A. V. (2013). *Web-Programming: Lecture Course. Educational and Methodological Manual*. Ministry of Education and Science of Ukraine, National Aerospace University "KhAI". 65 p. [Electronic resource].

3. Kharchenko, V. S. (Ed.). (2014). *Green IT Engineering. In 2 Volumes. Vol. 2: Systems, Industry, Society. Lecture Materials*. Ministry of Education and Science of Ukraine, National Aerospace University "KhAI". 688 p.
4. Kharchenko, V. S. (Ed.). (2016). *Green Sensor Networks and Microcontroller Systems: Methods and Tools for Research and Development. Training Manual*. Ministry of Education and Science of Ukraine, National Aerospace University "KhAI", Kharkiv. 160 p.
5. Sachenko, A. O., Kochan, V. V., Bykovyy, P. Y., Zahorodnia, D. I., Osolinsky, O. R., Skarga-Bandurova, I. S., Derkach, M. V., Orekhov, O. O., Stadnik, A. O., Kharchenko, V. S., & Fesenko, H. V. (2019). *Internet of Things for Intelligent Transport Systems: Practicum* (A. O. Sachenko, Ed.). Ministry of Education and Science of Ukraine, Ternopil National Economic University, Volodymyr Dahl East Ukrainian National University, National Aerospace University "Kharkiv Aviation Institute". 135 p.
6. Kanarskyi, Y. O., Orekhov, O. O., & Stadnyk, A. O. (2023). Methods for evaluating the quality of augmented reality systems. In V. S. Kharchenko & O. I. Morozova (Eds.), *Methods and Technologies for Ensuring the Quality and Safety of Intelligent Systems: Collective Monograph*, pp. 57–73. Kyiv: Yuston Publishing. Ministry of Education and Science of Ukraine, National Aerospace University "Kharkiv Aviation Institute".
7. Stadnyk, A. O., Orekhov, O. O., Kharchenko, V. S., & Kanarskyi, Y. O. (2024). *Augmented Reality Technologies: Laboratory Manual* [Electronic resource]. Kharkiv: National Aerospace University "Kharkiv Aviation Institute" named after M. Zhukovsky. 88 p.

#### Links to Citation Database Profiles:

**Scopus:** <https://www.scopus.com/authid/detail.uri?authorId=55347351300>

**Web of Science:** <https://publons.com/researcher/3101981/oleksandr-orekhov/>

**ORCID:** <https://orcid.org/0000-0001-6957-1934>

**Google Scholar:** <https://scholar.google.com/citations?hl=ru&authuser=1&user=nYx0-WkAAAAJ>

#### ADDITIONAL INFORMATION:

##### Language Proficiency:

**Ukrainian** Native language

**English** Fluent in reading and writing

**Russian** Fluent in reading and writing

##### IT Skills:

**Operation systems:** Microsoft Windows

**Programming languages:** Assembler, C#, C/C++, HTML, JavaScript

**Databases:** MySQL

**Frameworks:** Microsoft Silverlight, WPF

**Learning platform:** Moodle, Sakai, Mentor

##### Social and Community Activities:

Member of the Council of the Faculty of Radio-Electronics, Computer Systems and Infocommunications. Expert in Educational Programs at the Department of Computer Systems, Networks and Cybersecurity. Accreditation and Licensing Manager of the Department of Computer Systems, Networks, and Cybersecurity. Member of the public organization "Ukrainian Scientific and Educational IT Society."