

# Tetiana Hovorushchenko

Professor,  
DrSc.

Khmelnytskyi National University



## Personal information:

Date of birth: 01.03.1980,  
Place of birth:  
Khmelnytskyi,  
Khmelnytskyi region,  
Ukraine  
Married, one children

## Contacts:

Phone: (380-382) (785-682), (38095) (11-22-544)  
Address: ap.112, 18/2,  
Mazura str.,  
Khmelnytskyi, 29019,  
Ukraine  
Email: [tat\\_yana@ukr.net](mailto:tat_yana@ukr.net)

## Educational background:

- 2018 – DrSc. degree, Ukrainian Academy of Printing, Lviv, Ukraine  
*Thesis title:* «Theoretical and applied principles of information technology for assessing the sufficiency of information on quality in the specifications of software requirements»
- 2007 – Ph.D. degree, National University “Lviv Polytechnic”, Lviv, Ukraine  
*Thesis title:* «Improving the veracity of the software application testing process based on neural network information technologies»
- 2002 – Bachelor’s and Master’s degree at Technological University of Podillya, Khmelnytskyi, Ukraine

## Work experience:

- 2017 - present – Head of Computer Engineering and Information Systems Department, Khmelnytskyi National University, Khmelnytskyi, Ukraine
- 2008 - 2016 – Associate Professor at the Department of System Programming, Khmelnytskyi National University, Khmelnytskyi, Ukraine
- 2007 - 2008 – Senior Lecturer at the Department of System Programming, Khmelnytskyi National University, Khmelnytskyi, Ukraine
- 2004-2007 – Lecturer at the Department of System Programming, Khmelnytskyi National University, Khmelnytskyi, Ukraine
- 2002-2004 – Lecturer at the Department of Computer Systems, Technological University of Podillya, Khmelnytskyi, Ukraine

## Awards, prizes and scholarships:

- 2020 – Prize of the Verkhovna Rada of Ukraine for young scientists for the work "Intelligent information and analytical technology for improving the software quality by assessing the sufficiency of information in the early stages of the life cycle" for 2019 (Resolution of the Verkhovna Rada №1043-IX from 02.12.2020)
- 2011 - 2013 – Scholarship of the Cabinet of Ministers of Ukraine for young scientists
- 2008 – 2010 – Scholarship of the Cabinet of Ministers of Ukraine for young scientists

## R&D projects:

- 2023-present - ERASMUS+ SMART-PL “Students’ Personalized Learning Model Based on the Adaptation of a Virtual Learning Environment”
- 2022-present - ERASMUS+ MOVEx “Development of the Model and Open database of Virtual national and international academic Exchange programs to facilitate the university students’ academic mobility and international cooperation”
- 2021-2022 - R&D project: “Self-organized distributed malware detection system on computer networks” (№0121U109936), Ukraine
- 2019-2020 - R&D project: “Agent-oriented system for improving the security and quality of computer systems’ software” (№0119U100662), Ukraine
- 2016-2020 - ERASMUS+ HRLAW - European Human Rights Law for Universities of Ukraine and Moldova (HRLAW 573861-EPP-1-2016-1-EE-EPPKA2-CBHE-JP)
- 2013-2017 - TEMPUS Project KTU - Knowledge Transfer Unit - From Applied Research and Tehnology-Enterpreurial Know-How Exchange to Development of Interdisciplinary Curricula Models (544031-TEMPUS-1-2013-1-AT-TEMPUS-JPHES)
- 2011-2014 - TEMPUS Project REGENLAW - Development of Regional Interdisciplinary Post-Graduate Energy and Environmental Law Studies, (516911-TEMPUS-1-2011-1-DE-TEMPUS-JPCR)
- 2010-2013 - TEMPUS Project – SAFEGUARD - National Safeware Engineering Network of Centres of Innovative Academia Industry Handshaking (158886-TEMPUS-2009-UK-JPCR)
- 2009-2012 - TEMPUS Project – IPMASTER - Intellectual Property Law: New Master Curriculum for the National Consultancy EU Centre on IP Management (№ 144628-TEMPUS-2008-SE-JPCR)

## Scientific interests:

Information technologies;  
Software quality audit and assurance;  
Verification and validation of critical software;  
Information systems and technologies for medicine

### Reviewer of Scopus/WoS Journals, Expert:

- Expert Systems With Applications, ISSN: 0957-4174, IF: 12.2 (2021)
- Computers in Biology and Medicine, ISSN: 0010-4825, IF: 8.2 (2021)
- Defence Technology, ISSN: 2214-9147, IF: 6.1 (2021)
- MDPI Information, ISSN: 2078-2489, IF: 4.2 (2021)
- MDPI Diagnostics, ISSN: 2075-4418, IF: 3.992 (2021)
- MDPI Sustainability, ISSN: 2071-1050, IF: 3.889 (2021)
- Journal of Intelligent & Fuzzy Systems, ISSN: 1064-1246, IF: 2.9 (2021)
- MDPI Mathematics, ISSN: 2227-7390, IF: 2.592 (2021)
- Indonesian Journal of Electrical Engineering and Computer Science, ISSN: 2502-4752, IF: 2.4 (2021)
- International Journal of Computing, ISSN: 1727-6209, IF: 2.1 (2021)
- CEUR Workshop Proceedings, ISSN: 1613-0073, IF: 1.1 (2021)
- 2019 - now an expert of the section "Informatics and Cybernetics" of the Scientific Council of the Ministry of Education and Science of Ukraine, Ukraine
- 2020 - now an expert of the group for evaluating the effectiveness of higher education institutions in terms of their scientific (scientific and technical) activities in the scientific field of Technical Sciences, Ukraine

### Organizing & Program Committee Member:

- IEEE International Scientific Conference "Dependable Systems, Services and Technologies
- IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications
- International Workshop on Informatics & Data-Driven Medicine
- International Scientific and Practical Conference "Information Control Systems & Technologies"
- International Workshop on Computational & Information Technologies for Risk-Informed Systems
- International Workshop on Information Technologies: Theoretical and Applied Problems
- International Workshop on Intelligent Information Technologies & Systems of Information Security



### Public profiles:

ORCID ID	<a href="https://orcid.org/0000-0002-7942-1857">0000-0002-7942-1857</a>
Scopus ID	<a href="https://scopus.com/authid/detail.uri?authorId=54420153900">54420153900</a>
Researcher ID	<a href="https://www.researcherid.com/rid/K-9749-2015">K-9749-2015</a>
Google Scholar ID	<a href="https://scholar.google.com/citations?user=alJyKc8AAAAJ&amp;hl">alJyKc8AAAAJ&amp;hl</a>
Publons	<a href="https://publons.com/author/2365529">2365529</a>
ResearchGate ID	<a href="https://www.researchgate.net/profile/Tetiana-Hovorushchenko">Tetiana Hovorushchenko</a>

### Selected Publications (last 5 years, indexed in Scopus and/or Web of Science):

1. Hovorushchenko T., Medzaty D., Voichur Yu., Lebiga M. Method for forecasting the level of software quality based on quality attributes. *Journal of Intelligent & Fuzzy Systems*. 2022. DOI: 10.3233/JIFS-222394 (*Q2 by Scimago Journal & Country Rank*)
2. Tetiana Hovorushchenko, Artem Moskalenko and Vitaliy Osyadlyi. Methods of Medical Data Management Based on Blockchain Technologies. *Journal of Reliable Intelligent Environments*. 2022 (*Q2 by Scimago Journal & Country Rank*)
3. M. Fedula, T. Hovorushchenko, A. Nicheporuk, V. Martynyuk. Chaos-based signal detection with discrete-time processing of the Duffing attractor. *Eastern-European Journal of Enterprise Technologies*. 2019. Vol. 4. No. 4 (100). Pp. 44-51 (*Q2 by Scimago Journal & Country Rank*)
4. T. Hovorushchenko, O. Pavlova, M. Bodnar. Development of an Intelligent Agent for Analysis of Nonfunctional Characteristics in Specifications of Software Requirements. *Eastern-European Journal of Enterprise Technologies*. 2019. Vol. 1. No. 2 (97). Pp. 6-17 (*Q3 by Scimago Journal & Country Rank*)
5. Hovorushchenko T. Information Technology for Assurance of Veracity of Quality Information in the Software Requirements Specification. *Advances in Intelligent Systems and Computing*. 2018. Vol. 689. Pp. 166–185 (*Q3 by Scimago Journal & Country Rank*)
6. Hovorushchenko T., Pavlova O. Method of Activity of Ontology-Based Intelligent Agent for Evaluating the Initial Stages of the Software Lifecycle. *Advances in Intelligent Systems and Computing*. 2019. Vol. 836. Pp. 169-178 (*Q3 by Scimago Journal & Country Rank*)

7. Hovorushchenko T. Methodology of Evaluating the Sufficiency of Information for Software Quality Assessment According to ISO 25010. *Journal of Information and Organizational Sciences*. 2018. Vol. 42. No.1. Pp. 63-85 (*Q4 by Scimago Journal & Country Rank*)
8. T. Hovorushchenko, A. Herts, Ye. Hnatchuk, O. Sachenko. Supporting the decision-making about the possibility of donation and transplantation based on civil law grounds // *Advances in Intelligent Systems and Computing*. 2021. Vol.1246. Pp. 357-376. (*Q4 by Scimago Journal & Country Rank*)
9. Hnatchuk Ye., Hovorushchenko T., Medzaty D. Decision Support System Regarding the Possibility of Using the Reproductive Technologies Taking into Account Civil Law. *International Journal of Computer Science and Network Security*. 2022. Vol.22. No.07. Pp. 413-420 (*Q4 by Journal Citation Report*)
10. Hnatchuk Ye., Hovorushchenko T., Drapak G., Kysil T. Technology of Decision-Making Support Regarding the Possibility of Donation and Transplantation Considering Civil Law. *International Journal of Computer Science and Network Security*. 2022. Vol. 22. No. 09. Pp. 307-315 (*Q4 by Journal Citation Report*)
11. T. Hovorushchenko, A. Nicheporuk, D. Medzaty. Sustainability of Knowledge & Technology Transfer Center at Khmelnytsky National University (Ukraine). *International Journal of Innovation*. Vol. 7, No. 2 (2019): May-August. Pp. 210-226 (*Q4 by Journal Citation Report*)
12. T. Hovorushchenko, A. Boyarchuk, O. Pavlova. Ontology-Based Intelligent Agent for Semantic Parsing the Software Requirements Specifications // *International Journal on Information Technologies and Security*. 2019. No. 2. Vol. 11. Pp.59-70 (*Q4 by Journal Citation Report*)
13. Hovorushchenko T., Pomorova O. Information Technology of Evaluating the Sufficiency of Information on Quality in the Software Requirements Specifications. *CEUR-WS*. 2018. Vol.2104. Pp.555-570
14. T. Hovorushchenko, O. Pavlova, M. Fedula. Improving the input information for medical software requirements specifications using ontology-based intelligent agent. *CEUR-WS*. 2018. Vol. 2255. Pp.113-125
15. T. Hovorushchenko, A. Boyarchuk, O. Pavlova, K. Bobrovnikova. Agent-Oriented Information Technology for Assessing the Initial Stages of the Software Life Cycle // *CEUR-WS*. 2019. Vol. 2393. Pp.617-632
16. T. Hovorushchenko, O. Pavlova. Intelligent System for Determining the Sufficiency of Metric Information in the Software Requirements Specifications // *CEUR-WS*. 2019. Vol. 2353. Pp.253-266
17. T. Hovorushchenko, A. Herts, Ye. Hnatchuk. Concept of Intelligent Decision Support System in the Legal Regulation of the Surrogate Motherhood. *CEUR-WS*. 2019. Vol. 2488. Pp. 57-68
18. T. Hovorushchenko, O. Pavlova, A. Boyarchuk. Modelling of non-functional characteristics of the software for selection of accurate scope of information for their evaluation. *CEUR-WS*. 2019. Vol. 2533. Pp. 206-216
19. T. Hovorushchenko, O. Pavlova, D. Medzaty. Ontology-Based Intelligent Agent for Determination of Sufficiency of Metric Information in the Software Requirements // *Advances in Intelligent Systems and Computing*. 2020. Vol.1020. Pp. 447-460
20. T. Hovorushchenko, A. Herts, O. Pavlova. Method of Forming a Logical Conclusion about Legal Responsibility in the Cybersecurity Domain. *CEUR-WS*. 2020. Vol. 2732. Pp. 128-135.
21. T. Hovorushchenko, A.Herts, Ye. Hnatchuk. Information Technology for Legal Regulation of the Dental Services Contract. *CEUR-WS*. 2020. Vol. 2623. Pp. 14-24.
22. T. Hovorushchenko, A.Boyarchuk, O. Borovyk, D. Medzaty, M.Krasovskiy. Structure of Multifunctional Cooperative Robotics System based on the Ontological Approach. *CEUR-WS*. 2020. Vol. 2623. Pp. 47-56.
23. T. Hovorushchenko, A.Herts, Ye. Hnatchuk. Modeling the Decision Making Process on Civil Law Regulation of Contracts for the Provision of Therapeutic Services. *CEUR-WS*. 2020. Vol. 2711. Pp. 333-342.
24. T. Hovorushchenko, A.Herts, V. Kunchenko-Kharchenko. Intelligent Information Technology for Verifying the Correctness of the Mortgage Agreement Structure. *CEUR-WS*. 2020. Vol. 2805. Pp. 189-200.
25. Tetiana Hovorushchenko, Yelyzaveta Hnatchuk and Alla Herts. Decision-Making about Conclusion of Contractual Obligations in the Field of Medical Services. *CEUR-WS*. 2020. Vol. 2753. Pp. 142-148.
26. Pavlo Hryhoruk, Svitlana Grygoruk, Nila Khrushch, Tetiana Hovorushchenko. Using non-metric multidimensional scaling for assessment of regions' economy in the context of their sustainable development. *CEUR-WS*. 2020. Vol. 2713. Pp. 315-333.
27. Nila Khrushch, Pavlo Hryhoruk, Tetiana Hovorushchenko, Sergii Lysenko, Liudmyla Prystupa, Liudmyla Vahanova. Assessment of bank's financial security levels based on a comprehensive index using information technology. *CEUR-WS*. 2020. Vol. 2713. Pp. 239-260.
28. M. Skyba, T. Hovorushchenko, V. Martynyuk, O. Zasornov, O. Pavlova. Intelligent Solar Tracking System as a Prospect for Developing the Alternative Energetics in Ukraine. *CEUR-WS*. 2021. Vol. 2853. Pp. 50-61.
29. T. Hovorushchenko, Ye. Hnatchuk, A. Herts, O. Onyshko. Intelligent Information Technology for Supporting the Medical Decision-Making Considering the Legal Basis. *CEUR-WS*. 2021. Vol. 2853. Pp. 72-82.
30. T. Hovorushchenko. Criteria and Rules for Classification of Software Failures and Vulnerabilities. *CEUR-WS*. 2021. Vol. 3039. Pp. 217-224.

31. H. Osukhivska, T. Lobur, M. Khvostivskyy, L. Khvostivska, D. Velychko, T. Hovorushchenko and S. Lupenko. Mathematical modelling of daily computer network traffic. CEUR-WS. 2021. Vol. 3039. Pp. 107-111.
32. T. Hovorushchenko, Ye. Hnatchuk, A. Herts, A. Moskalenko, V. Osyadlyi. Theoretical and Applied Principles of Information Technology for Supporting Medical Decision-Making Taking into Account the Legal Basis. CEUR-WS. 2021. Vol. 3038. Pp. 172-181.
33. T. Hovorushchenko, P. Popov. Method of Developing the Defect-Free Medical Software by Establishing the Presence of Residual Defects. CEUR-WS. 2021. Vol. 3038. Pp. 11-21.
34. Tetiana Hovorushchenko, Peter Popov, Mariia Kapustian, Denys Lyubovetskyi and Olha Hovorushchenko. Cyber-Physical System for Donor Organs' Rejection Risks Prevention Based on Donor and Recipient Health Monitoring. CEUR-WS. 2022. Vol. 3156. Pp. 494-504.
35. Yelyzaveta Hnatchuk, Alla Herts, Andrii Misiats, Tetiana Hovorushchenko and Krishna Kant Singh. Covid'19 Vaccination Decision-Making Method and Subsystem Based on Civil Law. CEUR-WS. 2022. Vol. 3156. Pp. 262-273.
36. Hnatchuk Ye., Hovorushchenko T., Misiats A., Herts A., Boyarchuk A. Decision-Making Support for Necessity/Optionality/Contraindication of Vaccination against COVID-19 Considering Legal Norms. CEUR-WS. 2022. Vol. 3302. Pp. 200-213.
37. Hovorushchenko T., Osyadlyi V., Popov P., Kysil T. The Structure of the Blockchain-Based Multi-Agent System for Secure Management of Medical Information. CEUR-WS. 2022. Vol. 3302. Pp. 44-55.
38. Hovorushchenko T., Herts A., Boyarchuk A., Pavlova O. System for Determination of Legal Responsibility/Penalty for a Cybersecurity Breach. CEUR-WS. 2022. Vol. 3309. Pp. 233-244.
39. Hovorushchenko T., Popov P., Medzaty D., Voichur Yu. Method and Technology for Ensuring the Software Security by Identifying and Classifying the Failures and Vulnerabilities. CEUR-WS. 2022. Vol. 3309. Pp. 338-348.

#### **Books:**

1. Hovorushchenko T.O. Methodology of assessing the sufficiency of information for determining the quality of software: Monograph. Khmelnytskyi: Khmelnytskyi National University, 2017. 310 p. (in Ukrainian)
2. Hovorushchenko T.O. Computer logic: practice: Textbook. Khmelnytskyi: Khmelnytskyi National University, 2018. 294 p. (in Ukrainian)
3. Hovorushchenko T.O. Analysis, research and evaluation of software systems: Textbook. Khmelnytskyi: Khmelnytskyi National University, 2019. 358 p. (in Ukrainian)
4. T. Hovorushchenko, O. Pavlova, A. Boyarchuk, M. Kvassay, Ye. Hnatchuk, D. Medzaty. Intelligent Information-Analytical Technologies for Improving the Software Quality by Assessing the Sufficiency of Information at Initial Stages of the Life Cycle: Monograph. Jilina (Slovakia): University of Jilina, 2020. – 184 p. ISBN 978-80-554-1729-5 // [https://ki.fri.uniza.sk/kvassay/Intelligent\\_Inform\\_Hovorushchenko.pdf](https://ki.fri.uniza.sk/kvassay/Intelligent_Inform_Hovorushchenko.pdf)

#### **Certificates of registration of copyright to the work:**

1. Certificate 80642 Ukraine. Information technology for assessing the sufficiency of information on quality in the specifications of software requirements / T. O. Hovorushchenko. 2018.
2. Certificate 80644 Ukraine. Methodology for assessing the sufficiency of quality information in software requirements specifications / T. O. Hovorushchenko. 2018.
3. Certificate 80645 Ukraine. Method of activity of the ontology-based intelligent agent for assessing the initial stages of the software life cycle / T. O. Hovorushchenko, O. O. Pavlova. 2018.
4. Certificate 89841 Ukraine. Intelligent system for determining the sufficiency of metric information in software requirements specifications / T. O. Hovorushchenko, O. O. Pavlova. 2019.
5. Certificate 89840 Ukraine. Method of activity of the ontology-based intelligent agent for semantic parsing of natural language specifications of software requirements / T. O. Hovorushchenko, O. O. Pavlova. 2019.
6. Certificate 97014 Ukraine. Intelligent information-analytical technology for improving the software quality by assessing the sufficiency of information in the early stages of the life cycle / T. O. Hovorushchenko, O. O. Pavlova. 2020.
7. Certificate 97015 Ukraine. Computer program "Web-oriented information-analytical system for assessing the sufficiency of information in the specifications of software requirements" / O. O. Pavlova, T. O. Hovorushchenko. 2020.
8. Certificate 107849 Ukraine. Intelligent multi-agent system for improving the quality of software by taking into account the information of the subject area at all stages of its development / T. O. Hovorushchenko, I. Yu. Lopatto. 2021.

9. Certificate 107847 Ukraine. Method of developing defect-free software by establishing the presence of residual defects / T. O. Hovorushchenko. 2021.

10. Certificate 107848 Ukraine. Risk management method in software development / T. O. Hovorushchenko. 2021.

11. Certificate 113740 Ukraine. Information technology for supporting the medical decision-making, taking into account civil legal grounds / T. O. Hovorushchenko, Ye. H. Hnatchuk. 2022.

12. Certificate 113741 Ukraine. Criteria and rules for classification of software failures and vulnerabilities / T. O. Hovorushchenko. 2022.

13. Certificate 113734 Ukraine. Neural network model of software quality prediction / T. O. Hovorushchenko, M. M. Lebiga, Yu. O. Voichur. 2022.