

CURRICULUM VITAE

PERSONAL DETAILS:

Name: **Volodymyr STEPASHKO**
Date of birth: January 2, 1947
Nationality: Ukraine

Head of Department “Information Technologies of Inductive Modeling” at the International Centre for Information Technologies and Systems of the National Academy of Sciences of Ukraine (*shortly*: IRTC ITS NASU)



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FIELDS OF INTEREST: mathematical modeling, mathematical statistics, inductive modeling, artificial intelligence, computational intelligence, information technologies, data analysis, machine learning, data/knowledge mining, decision making support, predictive control, optimal control

ACADEMIC QUALIFICATIONS:

2011	Full Professor Title, specialty “Systems and Means of Artificial Intelligence”
1999	Professor of the National Technical University of Ukraine “Kyiv Polytechnic Institute”
1994	Doctor of Sciences degree, thesis “Automated Structure Identification of Forecasting Models of Complex Plants”, specialty “System Analysis and Automatic Control”
1989	Title of Senior Researcher, specialty “Control in Technical Systems”
1976	Candidate of Sciences degree (PhD), thesis “Development and Investigation of Optimization and Forecasting Methods on a Sliding Interval and Applying them to the Problem of Hydroeconomic Systems Control”; specialty “Technical Cybernetics and Information Theory”
1972-75	Post-graduate courses at the V.M.Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine, Kiev
1970	Specialist (Master) Diploma of Lviv State University, specialty “Radio-physicist”, specialization “Automatic Control Theory”

INDUSTRIAL/ACADEMIC EXPERIENCE:

- 2003 - present Professor (part-time) of the Institute of Applied System Analysis of the National Technical University “Kyiv Polytechnic Institute”, course “Complex Systems Modeling” for Bachelor students in Computer Sciences
- 1999 - 2012 Professor (contract bases) of Joint Chair of the IRTC ITS and the National Technical University “Kyiv Polytechnic Institute”, special course “Inductive Approach to Complex Systems Modeling” for Master students in specialty “Intelligent Systems of Decision Making”
- 1998 - present Head of Department “Information Technologies of Inductive Modeling” of the International Centre of NASU
- 1997-98 leading researcher of the International Center of NASU, Kyiv
- 1995-97 leading researcher of the V.M.Glushkov Institute of Cybernetics
- 1979-95 senior researcher of the V.M.Glushkov Institute of Cybernetics
- 1973-79 junior researcher of the V.M.Glushkov Institute of Cybernetics
- 1972-75 post-graduate student of the V.M.Glushkov Institute of Cybernetics; supervisor – O.H.Ivakhnenko, corr.-member of the NAS of Ukraine
- 1970-72 engineer of the V.M.Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine, Kyiv
- 1965-70 Lviv State University, physical faculty, specialty “Radio physics”

PEDAGOGICAL ACTIVITY:

Prepared:

- 2 Doctor of Sciences (upper scientific degree) in “Mathematical Modeling and Computation Methods” and “Information Technologies”
- 5 Candidate of Sciences (PhD) in “Control Systems and Processes” and “Information Technologies”
- 17 M. Sc. in Computer Science, specialty “Intelligent Systems of Decision Making”

Current supervising:

- 2 post-graduate (PhD) students, International Centre
- 2 postdocs preparing to defend their Candidate theses, International Centre
- 2 disciples preparing to defend their Doctor theses

PUBLICATIONS:

315 publications in total including: 5 books; articles in journals and collected papers; papers and abstracts in Conference Proceedings; 80 publications in English
Last 5 years: 60 publications in total, including 15 publications in English

MAIN DEVELOPMENTS:

1. Theory of Inductive Modeling of Complex Systems based on the Method of Critical Variances (MCV).
2. Theoretical justification of the Group Method of Data Handling (GMDH, developed by Academician O.H. Ivakhnenko) as efficient method of inductive construction of noise-immune forecasting models with minimal error variance.

3. Theoretical fundamentals of development and computer implementation of high-performance combinatorial and combinatorial-selective GMDH algorithms based on recurrent, searching and parallel operations.

4. Method of integral evaluation and prediction of complex system state on the basis of nonlinear normalization and aggregation of primary indicators of system performance.

5. Optimization theory of discrete dynamic plants on sliding interval under permanent predicted disturbances.

PROFESSIONAL ACTIVITY:

Organizing the scientific events:

Chairman and organizer of regular International Conferences and Workshops on Inductive Modelling held in Ukraine (2002, 2005, 2008, 2010-2015) and abroad – in Czech Republic (2007) and Poland (2009).

Chairman and organizer of annual International Summer School “Inductive Modelling: theory and applications” for graduate and PhD students and young scientists

Chairman of weekly Seminar “Modelling of Ecologic and Economic Systems Using New Information Technologies” (IRTC-NASU)

Participation in Program Committees and Conferences:

Member of Program Committees of 8 permanent International Conferences in Ukraine, Czech Republic, Poland, Russia, Bulgaria, Turkey.

During last 5 years: Participant of 27 International Conferences, in that as invited and plenary speaker at 11 International Conferences in Czech Republic, Poland, Russia, Turkey and Ukraine.

Membership in scientific councils:

Member of 3 Specialized scientific councils on defense of Cand. Sci and Dr. Sci degrees in Information Technologies, Medical and Biological Cybernetics, and Economic Sciences

During last 10 years: Reviewer of 12 Cand. Sci (PhD) and 4 Dr. Sci theses including 2 PhD theses in Czech Technical University in Prague (2007 and 2014)

Editorial activity:

Editor of collected articles “Inductive Modelling of Complex Systems”.

Reviewer of articles in 3 international journals

Visiting Invited lecturer:

Business School of Sichuan University – two week course “Inductive Modeling of Economic Processes” (2005)

Czech Technical University in Prague – two week course “Inductive Approach to Selection of Informative Features” (2013)

Russian Presidential Academy of national economy and public administration – one week course “Inductive Modelling: theory and applications” (2010-2013)

RECENT GUIDANCE OF R&D ACADEMICAL & GOVERNMENTAL PROJECTS (5 years, 2011 – 2015):

2011 – present Development of methods and technologies of intelligent modeling of socio-economic processes for managerial decisions support systems (5 years)

- 2013 – present Develop the high-performance technologies of inductive modeling of complex processes based on recurrent-and-parallel computing (3 years)
- 2013-2014 Develop a computer technology of informational support of managerial decisions in the economic security area of Ukraine (2 years)
- 2007-2011 Development and investigation of intelligent information technologies of inductive modeling of complex processes and systems (5 years)
- 2007-2011 Research and development of new information technologies of analysis and discovery of relationships of nonsteady dynamic processes under conditions of uncertainty and incomplete information (5 years)

LANGUAGES: **Ukrainian (native)**, English (90%), Russian (100%), Polish (100%), Bulgarian (60%), German (50%)

INTERESTS: guitar sung poetry, tourism

PERSONAL: married, two children

REFERENCES: **330** publications, incl. **55** during last 5 years (Available upon request)

Main references for last 5 years:

1. Stepashko V., Yefimenko S., Savchenko Ie. Computer Experiment in Inductive Modelling. – Kyiv: Naukova Dumka, 2014. – 222 p. (In Ukrainian: Степашко В.С., Єфіменко С.М., Савченко Є.А. Комп'ютерний експеримент в індуктивному моделюванні. – Київ: Наукова думка. – 2014. – 222 с. (Монографія))
2. Pavlov A., Stepashko V., Kondrashova N. Efficient Methods of Models Self-Organisation. – Kyiv: Akadempriodyka, 2014. – 200 p. (In Russian: Павлов А.В., Степашко В.С., Кондрашова Н.В. Эффективные методы самоорганизации моделей. – К.: Академкнига, 2014. – 200 с. (Монография))
3. Stepashko V., Samoilenko O., Voloschuk R. Informational Support of Managerial Decisions as a New Kind of Business Intelligence Systems. – Computational Models for Business and Engineering Domains / G.Setlak, K.Markov (Eds.). – Rzeszow, Poland; Sofia, Bulgaria: ITHEA, 2014. – 298 p. / – P. 269-279.
4. Zosimov V., Stepashko V., Bulgakova O. Inductive building of search results ranking models to enhance the relevance of the text information retrieval. – Proc. of the 26th Intern. Workshop “Database and Expert Systems Applications, 1-4 Sept., Valencia, Spain / Ed. by Markus Spies at al. – Los Alamitos: IEEE Computer Society, 2015. – 316 p. / – P. 291-295. – ISBN: 978-1-4673-7582-5; ISSN: 1529-4188.
5. Yefimenko S., Stepashko V. Intelligent Recurrent-and-Parallel Computing for Solving Inductive Modeling Problems // Proceedings of 16th International Conference on Computational Problems of Electrical Engineering CPEE'2015, Lviv, Ukraine, September 2-5, 2015. – Lviv: Lviv Politekhnik Publisher, 2015. – 274 p. / – P. 236-238.