

Innokentiy Vassily Semushin

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|--------------|------------------------------|--------------|---|
| Nationality: | Russian | Citizenship: | Russia |
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1 Profile

- Highly self-motivated and results driven researcher and teacher in a career spanning 38+ years
- A committed team player and strong leader able to motivate others to deliver results
- Author of many publications known in identification and adaptive stochastic control community
- High level of qualifications complemented by some good administrative skills
- Long term teaching experience resulted in formulating the effective approaches to teaching Mathematical Information Technology (MIT)
- Strong adherent to and active user of modern computer technology in various aspects
- First class communication skills with the ability to liaise with people at all levels
- Currently seeking a challenging, career-enhancing opportunity in an Education & Research position where my skill set can make a valuable contribution

2 Multidisciplinary Expertise

2.1 Expertise Summary

- Strong foundations in theoretical Computer Science, Applied Mathematics, and Mathematical Information Technology coupled with the knowledge in Electrical Engineering and Electronics
- Extensive practical work in system modeling, analysis and design

2.2 Mathematical Information Technology (MIT)

- Linear Programming
- Linear Least Squares Computations that are robust and cost effective
- Filtering and Stochastic Control in Dynamical Systems
- Computational Linear Algebra

2.3 Decision & Control Science (DCS)

- Detection of Abrupt Changes
- Signal Recognition
- Unsupervised (Self-learning) Systems
- Fault Tolerant & Adaptive Control

2.4 Modeling, Analysis & Design (MAD)

- System Identification: Foundations and Methods
- Stochastic Models, Estimation and Control: Theory with applications (to the complex conditions of uncertainty and changeability)
- Modern Control Systems: Modeling, Analysis and Design of Linear Systems
- Combined Navigational Systems: Error Budget Analysis and Optimization

2.5 Computer Science (CS)

- Basic Discrete Mathematics
- Computer Engineering: Algorithms & Digital Automata Design

2.6 Education (Edu)

- Curriculum Development and Instructional Programs Design
- Educational material and media. Educational technology

3 Qualifications

3.1 Education & Degrees

- 1983– **Doctoral study**, Ulyanovsk State Technical University, Ulyanovsk, Russia.
- 1985 **Dissertation:** Active Adaptation and Fault Detection for Stochastic Discrete Time Control Systems.
Defended: April 09, 1987, St. Petersburg State University of Aerospace Instrumentation, St Petersburg (former Leningrad), Russia.
Degree conferred: Doctor of Science (Eng) in Data Processing and Control Systems. Certificate: TN No. 007038 by The Supreme Attestation Commission, Council of Ministers of the USSR. Protocol No. 33d/11, September 4, 1987, Moscow, Russia.
- 1968– **PhD study**, St. Petersburg Electrical Engineering University “LETI”, St Petersburg (former Leningrad), Russia.
1970 **Dissertation:** Closed-loop Adaptive Filters Investigation.
Defended: October 30, 1970, St. Petersburg Electrical Engineering University “LETI”, St Petersburg (former Leningrad), Russia.
Degree conferred: Candidate of Science (PhD equivalent) in Automatic Control. Certificate: MTN No. 059978. St. Petersburg Electrical Engineering University “LETI”, Council Resolution No. 21, October 30, 1970, St Petersburg (former Leningrad), Russia.
- 1959– **Diploma study**, St. Petersburg Electrical Engineering University “LETI”, St Petersburg (former Leningrad), Russia.
1964 **Diploma Thesis:** Statistical Accuracy Analysis and Design of Analog-to-Digit Converter.
Defended: December 19, 1964, St. Petersburg Electrotechnical University “LETI”, St Petersburg (former Leningrad), Russia.

Degree conferred: Diploma Engineer in Mathematical Computing and Computer Engineering. Degree Certificate with Distinction: O No. 191118, St. Petersburg Electrical Engineering University “LETI”, State Examination Commission Resolution, December 19, 1964, St Petersburg (former Leningrad), Russia.

3.2 Honors, Awards & Academic Titles

| Date | Classification | Issuer |
|------|--|--|
| 2009 | “Honoured Professor of Ulyanovsk State University” | Ulyanovsk State University, April 2009, Ulyanovsk, Russia. |
| 2008 | “Honoured Science and Technology Worker of Ulyanovsk Region” | Government of Lenin Order Ulyanovsk Region, November 2008, Ulyanovsk, Russia. |
| 2003 | “The PAGU Scholar Prizewinner” ¹⁾ | Middle Volga State Universities Association (PAGU), February 2003, Ulyanovsk, Russia. |
| 2003 | “The Liubischev Scholar Prizewinner” for Scientific Developments in Ecology, Technology and Humanities | Government of Lenin Order Ulyanovsk Region, January 2003, Ulyanovsk, Russia. |
| 2003 | “The Man of Year 2003” & Biographical Entry in the book “2000 Outstanding Intellectuals of the 21 st Century”—2nd Edition | International Biographical Centre, Cambridge CB2 3QP England. |
| 1999 | “Honorary Figure of Russian Higher Education” ²⁾ | President of the Russian Federation, Decree No. 878, July 6, 1999, Moscow, Russia. Certificate: 3 No. 100189. |
| 1993 | “Honorary Citizen of Oklahoma City” in the context of successful negotiations for establishing the Russian-American College between Oklahoma City University and Lomonossov Moscow State University Branch in Ulyanovsk | Governor of the State Oklahoma, Oklahoma City, U.S.A, October 1993. |
| 1990 | “Professor of Mathematical Cybernetics and Informatics” . Certificate: PR No. 006489 | The State Committee of the USSR for Public Education. Resolution No. 531/p, December 13, 1990, Moscow, Russia. |
| 1975 | “Docent of Computer Science” . Certificate: MDC No. 095049 | The Supreme Attestation Commission. Protocol No. 50/37, October 22, 1975, Moscow, Russia. |

¹⁾ PAGU, as abbreviated in Russian, stands for the Middle Volga State Universities Association.

²⁾ The Russian Federation’s Outstanding Achievement Award in University Education.

4 Work History

4.1 University Professional Experience

| Tenure date | University | Position | Responsibilities |
|-------------|--|---|---|
| 2006– | Ulyanovsk State University, ³⁾ Ulyanovsk, Russia. | Professor of Mathematics and Information Technologies. | Scholarly research, advising Ph.D. students, developing and teaching applied mathematics courses. |
| 1989–2006 | Ulyanovsk State University, ³⁾ Ulyanovsk, Russia. | Professor of Mathematical Cybernetics and Informatics. | Scholarly research, advising Ph.D. students, developing and teaching applied mathematics courses. |
| 1988–1989 | Moscow State University Branch, Ulyanovsk, Russia. | Professor of Higher Mathematics and Informatics. | Scholarly research and teaching applied mathematics courses. |
| 1985–1988 | Ulyanovsk State Tech University, Ulyanovsk, Russia. | Professor / Senior Lecturer of Computer Science. | Scholarly research, advising graduate students, and teaching computer science courses. |
| 1983–1985 | Ulyanovsk State Tech University, Ulyanovsk, Russia. | Senior Research Fellow , Computer Science Department. | Directing industry related projects and pursuance of research under the topic of doctoral dissertation. |
| 1971–1983 | Ulyanovsk State Tech University, Ulyanovsk, Russia. | Senior Lecturer / Lecturer of Computer Science. | Scholarly research, advising graduate students, and teaching computer science courses. |

³⁾ Before July of 1996 Lomonossov Moscow State University Branch in Ulyanovsk.

4.2 Administrative Experience

| Tenure | University | Position | Responsibilities |
|-----------|--|--|--|
| 2006–2009 | Ulyanovsk State University, Ulyanovsk, Russia. | Director - Organizer of Russian-American Consortium. | Coordinating the cooperation between the three universities (Samara - Ulyanovsk - Texas). |
| 1989–2006 | Ulyanovsk State University, Ulyanovsk, Russia. | Head of Department of Mathematical Cybernetics and Informatics. | Developing and leading the department, determining the course offerings, and developing the major curricula. |
| 1992–2006 | Ulyanovsk State University, Ulyanovsk, Russia. | Head of the Lab of Mathematical Modeling. | Leading the laboratory, determining a research agenda, and directing projects. |
| 1990–1991 | Lomonossov State University Branch in Ulyanovsk. | Dean , School of Mathematics and Mechanics. | Developing a graduate program in Applied Mathematics, and faculty search and recruitment. |
| 1989–1990 | Lomonossov State University Branch in Ulyanovsk. | Dean , Schools of Mathematics /Mechanics & Physics/Technology. | Helping to foster a stimulating atmosphere for the two newly organized and growing schools. |

4.3 Further Professional Experience

| Term | University | Position | Responsibilities |
|---------------|---|--|---|
| Oct., 2000 | Gerhard Mercator University Duisburg, Germany. | Guest Professor , Fach- bereich 11 Mathematik. | Presenting scientific research and discussing collaborative projects |
| 1998– 2002 | Russian / American College ⁴⁾ , Ulyanovsk, Russia. | Professor ⁵⁾ of Applied Mathematics. | Teaching a course of Linear Al- gebra (in English). |
| 1995– date | Ulyanovsk State Uni- versity of Technol- ogy, Ulyanovsk, Rus- sia. | Professor ⁵⁾ of Applied Mathematics. | Teaching graduate and under- graduate courses and directing Ph.D. dissertations. |
| Oct., 1993 | Oklahoma City Uni- versity, Oklahoma, the U.S.A. | Guest Professor , Math- ematics and Physics Divi- sion. | Lecturing in Recursive Least Squares and negotiating for or- ganizing the Russian / American College ⁴⁾ . |

⁴⁾ Within the structure of Ulyanovsk State University, Ulyanovsk, Russia.

⁵⁾ A part-time position.

4.4 Present Full-Time Position

Professor
Department of IT, School of Mathematics and Information Technology
Ulyanovsk State University
Ulyanovsk, Russia

5 Teaching

| Institution | Term | Course | Hpw ⁶⁾ |
|--|-----------|--|-------------------|
| Ulyanovsk State University, Ulyanovsk, Russia | 2012–date | Basics of Research | 3 |
| | 2007–2011 | Decision Science | 3 |
| | 2005–2012 | Basic Modeling | 3 |
| | 2004–2012 | Discrete Mathematics | 3 |
| | 2003–2012 | Linear Programming | 3 |
| | 2003–2012 | Methods of Optimization | 3 |
| | 2001–date | Computational Mathematics | 3 |
| | 1997–date | Numerical Methods | 3 |
| | 1998–2006 | Recursive Least Squares | 3 |
| | 1995–2006 | Modern Control Systems | 4 |
| | 1992–1993 | Statistical Decision Theory | 3 |
| | 1990–1996 | Numerical Linear Algebra | 3 |
| | 1989–date | Stochastic Models, Estimation and Control | 5 |

⁶⁾ Hours per week.

| Institution | Term | Course | Hpw ⁶⁾ |
|---|------------|--|-------------------|
| Oklahoma City University, Oklahoma City, U.S.A. | Oct., 1993 | Computational Techniques of Recursive Least Squares | 3 |
| | 2013–date | Research Typesetting Systems | 3 |
| | 2011–date | Modeling | 3 |
| | 2011–date | Complex Systems Modeling | 3 |
| | 1998–2000 | Control Theory | 3 |
| Ulyanovsk State Technical University, Ulyanovsk, Rus- sia | 1996–date | Numerical Methods | 3 |
| | 1996–2012 | Optimization Methods | 3 |
| | 1997–1998 | Stochastic Models | 4 |
| | 1996 | Trends in Modern Computers | 2 |
| | 1985–1988 | Error Detecting for Computers | 2 |
| | 1985–1988 | Digital Automata Theory | 3 |
| | 1971–1988 | Computer Theory and Design | 4 |
| Russian / American College ⁷⁾ | 1998–2002 | Linear Algebra (<i>in English</i>) | 4 |

⁶⁾ Hours per week.

⁷⁾ Within the structure of Ulyanovsk State University, Ulyanovsk, Russia.

6 Interdisciplinary Research

6.1 Fields of Interest (2000 Mathematics Subject Classification)

| | | | |
|-------|--|-------|---|
| 62-xx | Statistics | 65-xx | Numerical analysis |
| 62F03 | Hypothesis testing | 65C20 | Models, numerical methods |
| 62J20 | Diagnostics | 65Fxx | Numerical linear algebra |
| 62L10 | Sequential analysis | 65Pxx | Numerical problems in dynamical systems |
| 62M20 | Prediction; filtering | 90Cxx | Mathematical programming |
| 93-xx | Systems theory; control | 90C05 | Linear programming |
| 93Exx | Stochastic systems and control | 90C31 | Sensitivity, stability, parametric optimization |
| 93Bxx | Controllability, observability, and system structure | 97Uxx | Educational material and media. Educational technology |
| 97Dxx | Education and instruction in math- ematics | 97U40 | Problem books; student competi- tions, examination questions |
| 97D40 | Teaching methods and class- room techniques. Lesson preparation. Educational prin- ciples | 97U70 | Technological tools (computers, calculators, software, etc.) and their use in the classroom |
| 97D50 | Teaching problem solving and heuristic strategies | | |

6.2 Past Research

Mostly on stochastic systems and control theory, modeling of uncertain systems and signals, including those with unforeseen changes in their characteristics, and application of the theory to separately or jointly performed state estimation, change detection and parameter identification in a statistical framework.

6.3 Industry Related Projects

| Term | Project Title | Supported by |
|---------------|---|---|
| 2013– date | CLASS-M (Computational Laboratory for Adaptive Stochastic Systems Modeling) | Russian Foundation for Basic Research |
| 1988– 1992 | The Quickest Detection of Changes in the Models of Vehicle Motion | Ministry of Shipbuilding Industry, Russia Federation |
| 1984– 1988 | Inertial Navigation System Error Sources Identification | Ministry of Aerospace Instrumentation Industry, Russia Federation |
| 1968– 1970 | Adaptive Filtering in Radio-Navigation Systems | Ministry of Electronic Industry, Russia Federation |

7 Activities

7.1 Developed Initiatives

| Term | Role | Initiative Title | Result |
|---------------|--|--|---|
| 2012– 2012 | Guest Editor | Special Issue on Models, Algorithms and Applications (MAA) of International Journal of Communications, Network and System Sciences published by Scientific Research Publishing (SCIRP) | Volume 5, Number 9A, September 2012 (Special Issue on Models and Algorithms for Applications) |
| 2006– 2007 | Co-author | Consortium of Three Universities: Koroletv Samara State Aerospace University (SSAU) Samara, Russia, and Ulyanovsk State University (USU) Ulyanovsk, Russia, and Texas Tech University (TTU) | Memorandum of Agreement has been signed by all three parties |
| 2005 | International Co-Chair for Russia, Focus Symposium Organizer | Concurrent Engineering CE-2005 Focus Symposium on “Recursive Dynamics and Iterated Mappings in Service Modeling and Design” 25–29 July, 2005, Renaissance Worthington Hotel, Ft. Worth/Dallas, USA | Organized Focus Symposium at the 12 th International Conference CE-2005 (19 papers accepted) |

| Term | Role | Initiative Title | Result |
|-----------|--|--|--|
| 2004 | Member of the IPC, Mini-Symposium Co-organizer | “ECCOMAS-2004 Mini-Symposium on Dynamic and Evolutionary Methods in Replication-Selection Systems”. 4 th European Congress on Computational Mathematics in Applied Sciences, ECCOMAS-2004, July 24–28, 2004, Jyväskylä, Finland | Organized Mini-Symposium at the 4 th ECCOMAS (12 papers accepted) |
| 2004 | Member of the IPC, Reviewer | Membership in the IPC of the 11 th ISPE International Conference on Concurrent Engineering CE-2004, – Beijing, China | 8 papers reviewed |
| 2004 | Co-leader | SCALE (Stochastic, Cybernetic and Adaptive Logistic Engineering). The initiative united 19 universities of the seven countries (Hungary, Italy, Poland, Russia, Romania, USA, Finland). | Focus Symposium at CE-2005 |
| 2003 | Member of the IPC, Workshop Organizer | Workshop on Recursive and adaptive signal/image processing - RASIP. The 3d International Conference on Computational Science, - St. Petersburg, Russia, and Melbourne, Australia | Organized the Workshop (11 papers accepted) |
| 2003 | Member of the IPC, Workshop Organizer | Workshop on Concurrent Engineering for Addressing Uncertainty. The 10th ISPE International Conference on Concurrent Engineering, - Madeira, Portugal | Organized the Workshop (8 papers accepted) |
| 1993 | Negotiator | Russian / American College in the structure of Lomonossov Moscow State University Branch at Ulyanovsk | Established in 1995. Transformed into Russian / American Faculty of the Ulyanovsk State University in 2000 |
| 1986–1988 | Member of the working group | Establishing the Lomonossov Moscow State University Branch at Ulyanovsk | Established in 1988. Transformed into the Ulyanovsk State University in 1996 |

7.2 Memberships in Professional Organizations

- 2013–date Global World Communicator (GWC). Education and Science, Council Member
- 2012–date IEEE Membership, Control Systems Society (CSS)
- 2010–date Editorial Board Membership, International Journal of Communications, Network and System Sciences, a journal published by Scientific Research Publishing (SCIRP)
- 2008–date Machine Intelligence Research Labs (MIR Labs) Membership for Russia
- 2000–date American Mathematical Society (AMS) Membership

7.3 Memberships in Dissertation Committees

| | | |
|---------------------------------|--|--|
| 2001–date | Dissertation Committee D 212.278.02 on Mathematical Modeling, Numerical Methods and Integrated Software | Ulyanovsk State University, Ulyanovsk, Russia |
| 2001–2012 | Dissertation Committee D 212.277.02 on Mathematical Modeling, Numerical Methods and Integrated Software | Ulyanovsk State Tech University, Ulyanovsk, Russia |
| 2001–2004 | Dissertation Committee K 212.278.03 on Theory and Methods of Vocational Education | Ulyanovsk State University, Ulyanovsk, Russia |
| 1998–2000 | Dissertation Committee K 053.37.06 on Mathematical Modeling, Numerical Methods and Integrated Software | Ulyanovsk State University, Ulyanovsk, Russia |
| 1997–2000 | Dissertation Committee K 064.21.03 on Applications of Computers, Mathematical Modeling and Mathematical Methods in Scientific Research | Ulyanovsk State Tech University, Ulyanovsk, Russia |
| 1990–2000 | Dissertation Committee D 064.21.01 on Information and Computer Aided Design Systems | Ulyanovsk State Tech University, Ulyanovsk, Russia |
| 1994–2000 (Chair up to 1997) | Dissertation Committee K 053.37.03 on Mathematical Cybernetics, Mathematical Logic, Algebra and Number Theory | Ulyanovsk State University, Ulyanovsk, Russia |

7.4 Directing Ph. D. dissertations of My Post-Graduate Students

| YoD ⁸⁾ | Ph.D. Student | Thesis Title Specialty Date of defense Diploma # |
|-------------------|----------------------|--|
| 2014 | Kliment V. Zakharov | Title: Ship Maneuver Detection with Consideration of Indirect Attributes Specialty: 05.13.18—Mathematical Modeling, Numerical Methods and Integrated Software DoD: Tentatively 26.03.2014 Diploma #: TBA |
| 2010 | Alexander I. Moiseev | Title: Mathematical Modeling of the Littoral Observation System Placement Specialty: 05.13.18—Mathematical Modeling, Numerical Methods and Integrated Software DoD: 23.12.2010 Diploma #: DKN # 134695 of 13 May 2011, # 20/44 |
| 2010 | Ilia S. Yastrebov | Title: Mathematical Models and Implementation of the Role-Context Based Access Guarding for a Distributed Physical Experimentation Control System Specialty: 05.13.18—Mathematical Modeling, Numerical Methods and Integrated Software DoD: 23.12.2010 Diploma: DKN # 131968 |

⁸⁾ Year of defence.

| YoD ⁸⁾ | Ph.D. Student | Thesis Title Specialty Date of defense Diploma # |
|-------------------|----------------------|---|
| 2007 | Maria A. Fedorova | Title: Computational and Evolutionary Methods in Stochastic Systems with Detection and Adaptation Specialty: 01.01.09—Discrete Mathematics and Mathematical Cybernetics DoD: 07.11.2007 Diploma: DKN # 052033 |
| 2005 | Olga A. Fat'yanova | Title: Auxiliary Performance Indices and Stability in Stochastic Identification Problems Specialty: 05.13.18—Mathematical Modeling, Numerical Methods and Integrated Software DoD: 16.06.2006 Diploma: DKN # 00661 |
| 2005 | Alexey E. Kondrat'ev | Title: Diagnosis Methods for Stochastic Adaptive Systems Construction Specialty: 05.13.18—Mathematical Modeling, Numerical Methods and Integrated Software DoD: 16.06.2006 Diploma: DKN # 006617 |
| 2005 | Vladimir V. Ugarov | Title: Computer Models and Program Packages in Project-based Learning Specialty: 05.13.18—Mathematical Modeling, Numerical Methods and Integrated Software DoD: 22.12.2005 Diploma: KT # 180745 of 12.05.2006 |
| 2005 | Maria V. Kulikova | Title: Methods for Logarithmic Likelihood Function and Its Gradient Computation in the Kalman Filtering Algorithms Specialty: 01.01.09—Discrete Mathematics and Mathematical Cybernetics DoD: 22.12.2005 Diploma: KT # 174691 |
| 2002 | Oleg Yu. Gorokhov | Mathematical Cybernetics & Discrete Mathematics |
| 2000 | Julia V. Tsyganova | Mathematical Cybernetics & Discrete Mathematics |
| 1998 | Victor V. Taratukhin | Information and Computer Aided Design Systems |
| 1997 | Leonid V. Kalinin | Applications of Computers, Mathematical Modeling and Mathematical Methods in Scientific Research |
| 1997 | Eugene V. Dulov | Mathematical Cybernetics & Discrete Mathematics |
| 1996 | Anatoli G. Skovikov | Applications of Computers, Mathematical Modeling and Mathematical Methods in Scientific Research |
| 1992 | Sergei V. Vershinin | Information and Computer Aided Design Systems |

⁸⁾ Year of defence.

8 Funding Received

- 2014–2015

Classification: Research grant “Providing Educational Process with the Effective Tools for Active Learning of Difficult Disciplines of Information and Computing Technologies.”

Sponsor: Russian Foundation for Basic Research, project No. 14-07-00665.

- 2013–2014

Classification: Research grant “Active Principle of Adaptation-Based Human Body Thermal Homeostasis Adaptive Stochastic Modeling.”

Sponsor: Russian Foundation for Basic Research, project No. 13-01-9703513.

- 2004

Classification: Research grant “COMBINE-for-PACE. Component Based Integration Environment: Performance Assessment of a Complex Enterprise.”

Sponsor: The European Commission. A program of EU-RU RTD cooperation: FP6, IST, project ADMIRE-P.

- 2003–2004

Classification: Research grant “Solutions to the Joint Problems of Fault Detection, Diagnosis, Identification, and Parring in Stochastic Control Systems.”

Sponsor: Ministry for Education of the Russian Federation. Project No. T02-03.2-3427.

- 2002–2003

Classification: Research grant “Improving Efficiency of Identification Methods for Discrete Stochastic Adaptive Systems” to support post-graduates’ studies in the Russian Federation universities (post-graduate student O. A. Fatyanova).

Sponsor: Ministry for Education of the Russian Federation. Project No. A03-3.16-414.

- 2002–2003

Classification: Research grant “Iterative Three-stage Re-design for Discrete Stochastic Adaptive Systems with the Control Input” to support post-graduates’ studies in the Russian Federation universities (post-graduate student A. E. Kondratiev).

Sponsor: Ministry for Education of the Russian Federation. Project No. A03-3.16-409.

- 2002

Classification: Travel Grant to participate in Concurrent Engineering Conference, CE-2002, 27–31 July, 2002, Cranfield, United Kingdom

Sponsor: International Science and Technology Center, Moscow, Travel Support Program, Project No. TSP-EU-029-030/2002

- 2002

Classification: Travel Grant to participate in the 2d International Conference on the Teaching of Mathematics (at the undergraduate level), ICTM-2, 1–6 July 2002, Heronissos, Crete, Greece

Sponsor: Russian Foundation for Basic Research, Project No. 02-01-10751

- 2000

Classification: Travel Grant to participate in the European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS-2000, 11–14 September 2000, Barcelona, Spain

Sponsor: Russian Foundation for Basic Research, Project No. 00-01-10874

- 1999

Classification: Travel Grant to participate in the 3rd European Conference on Numerical Mathematics and Advanced Applications, ENUMATH-1999, 26–30 July 1999, Jyväskylä, Finland

Sponsor: Russian Foundation for Basic Research, Project No. 99-01-10717

- 1992–1996

Classification: Research Scholarship within the 1st National Program “Universities of Russia”

Sponsor: Russia Federation Committee for the Highest Education, Project: Nonlinear Dynamical Systems, No. NDS-34

- 1983–1985

Classification: Senior Research Scholarship to complete doctoral dissertation research

Sponsor: Ulyanovsk State Polytechnical Institute, Ulyanovsk, Russia

9 List of Publications

9.1 Books & Chapters of Books

1. I. V. Semushin (Ch.1 & Ch.2), J. V. Tsyganova (Ch.3), M. V. Kulikova (Ch.4), O. A. Fat’yanova (Ch.5), and A. E. Kondrat’ev (Ch.5). *Adaptive Systems of Filtering, Control, and Fault Detection*. Collective monograph. Ed. By Prof. I. V. Semushin. Ulyanovsk: USU Publishers, 2011. – 298 p. – ISBN 978-5-88866-399-8. [in Russian]

2. N.G. Yarushkina, I.V. Semushin, et al. *Applied Intelligence Systems Based on Soft Computing*. Collective monograph. Ulyanovsk: USTU Publishers, 2005. – 138 p. – ISBN 5-89146-780-1. [in Russian]
3. I. V. Semushin, *Adaptive Identification and Fault Detection Methods in Random Signal Processing*. Saratov: Saratov University Publishers, 1985. – 180 p. [in Russian]

9.2 Textbooks and Study Guides

1. I. V. Semushin, *Writing and Presentation of a Research Work—Essential Skills for Degree-Seeking Students*. Electronic study guide (Self help) / Materials developer and layout designer I.V. Semushin. // Ulyanovsk: USTU,2013.—1070 slides (260 frames). [in Russian] Free download from <http://venec.ulstu.ru/lib/> USTU Electronic Library.
2. I. V. Semushin, *Collected Assignments in Linear Programming*. Electronic study guide (self help) // Ulyanovsk: USTU Publishers, 2012. – 88 p. [in Russian] Free download from http://venec.ulstu.ru/lib/disk/2012/semushin_lin-progam-colassignments.pdf USTU Electronic Library.
3. I. V. Semushin, *Computational Methods of Algebra and Estimation*. Textbook // Ulyanovsk: USTU Publishers, 2011. – 366 p. ISBN 978-5-9795-0902-0. [in Russian] Free download from <http://venec.ulstu.ru/lib/disk/2013/119.pdf> USTU Electronic Library.
4. I. V. Semushin and Ju. V. Tsyganova, *Stochastic Models, Estimation and Control. Section: Deterministic Models of Dynamic Systems*. Manual // USTU Publishers, Ulyanovsk 2007. – 58 p. [in Russian]
5. I. V. Semushin and Ju. V. Tsyganova, *Deterministic Models of Dynamic Systems*. Manual // USTU Publishers, Ulyanovsk 2006. – 77 p. ISBN 5-89146-983-9. ISBN 987-5-98146-983-9. [in Russian]
6. I. V. Semushin, *Numerical Methods of Algebra*. Textbook for colleges // USTU Publishers, Ulyanovsk 2006. – 178 p. ISBN 5-89146-998-7. ISBN 987-5-98146-998-3. [in Russian]
7. I. V. Semushin, S. G. Novikov, D. N. Pavlov, A. E. Rusanova, G. B. Savkhalov, and I. V. Korneev, *Linear Programming. Simplex Method*. Electronic interactive visual guide // OFAP – Russian Federation’s Trade Fund of Algorithms and Computer Programs. Certificate for trade registration of a design, No. 6947, 27 September 2006. [in Russian]
8. I. V. Semushin and E. E. Kuryshova. *Linear Programming*, Electronic interactive textbook // OFAP – Russian Federation’s Trade Fund of Algorithms and Computer Programs. Certificate for trade registration of a design, No. 5412, 25 November 2005. [in Russian]
9. I. V. Semushin, *Practical Works in Optimization Methods – Computer Course*. 3-d edition, classified publication by Russia’s Teaching Methods Association. Textbook for colleges // Ulyanovsk: USTU Publishers, 2005. – 146 p. [in Russian]

10. I. V. Semushin, *Practical Works in Optimization Methods – Computer Course*. 2-d edition, updated and supplemented. Textbook for colleges // Ulyanovsk: USTU Publishers, 2003. – 146 p. [in Russian] Free download from http://venec.ulstu.ru/lib/2003/4_Semushin_opt2.pdf USTU Electronic Library.
11. I. V. Semushin and Ju. V. Tsyganova, *Stochastic Models and Estimation*. Lab Experiments in Optimal Control Theory: Manual for colleges // Ulyanovsk: USTU Publishers, 2001. – 42 p. [in Russian] Free download from http://venec.ulstu.ru/lib/2001/4_Semushin_smo.pdf USTU Electronic Library.
12. I. V. Semushin and G. Yu. Kulikov, *Collected Lab Assignments, Tests and Examinations in Computational Linear Algebra*. Textbook for colleges // – Ulyanovsk: USTU Publishers, 2000. – 119 p. [in Russian] Free download from http://venec.ulstu.ru/lib/2000/4_Semushin_Kulikov.pdf USTU Electronic Library.
13. I. V. Semushin, *Practical course in Optimization Methods*. Textbook for colleges // Ulyanovsk: USTU Publishers, 1999. – 136 p. [in Russian] Free download from http://venec.ulstu.ru/lib/1999/4_Semushin_opt.pdf USTU Electronic Library.
14. I. V. Semushin and Ju. V. Tsyganova, *Stochastic Models*. Lab Experiments in Optimal Control Theory: Manual for colleges // Ulyanovsk: USTU Publishers, 1998. – 36 p. [in Russian]
15. I. V. Semushin and Ju. V. Tsyganova, *Stochastic Models, Estimation and Control. Section: Optimal Filtering with Linear System Models*. Lab Experiments in Optimal Control Theory: Manual for colleges // Ulyanovsk: USU, 1997. [in Russian]
16. I. V. Semushin and G. Yu. Kulikov, *Numerical Methods. Part 1: Linear Algebra Methods*. Manual // Ulyanovsk: USTU Publishers, 1996. [in Russian]
17. I. V. Semushin and G. Yu. Kulikov, *Lab Experiments in Computational Linear Algebra. Part 1*. Manual // Ulyanovsk: Moscow State University Branch in Ulyanovsk Publishers, 1995. [in Russian]
18. I. V. Semushin and L. N. Polyakova, *With Quattro-Pro: Quick and Precisely Processing Data on Academic Load*. Manual for department chairs // Ulyanovsk: Moscow State University Branch in Ulyanovsk Publishers, 1995. [in Russian]
19. I. V. Semushin and N. Kh. Ikhsanov, *To Author and Advisor of Student's Course / Diploma Works*. Manual // Ulyanovsk: Moscow State University Branch in Ulyanovsk Publishers, 1995. [in Russian]
20. I. V. Semushin and T. Yu. Fomina, *Epistemological Aspects of Control and Identification Theory*. Manual // Ulyanovsk: Ulyanovsk Polytechnic Institute Publishers, 1987. [in Russian]
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The grand total = 219 publications
including:

- ▷ monographs = 3
- ▷ text-books or manuals = 27
- ▷ journal papers with independent (external) reviewing = 63
- ▷ journal papers with local (internal) reviewing = 15
- ▷ papers in conference proceedings with independent (external) reviewing = 62

- ▷ patents = 5
- ▷ research-technical reports = 8
- ▷ conference short abstracts (or summaries) = 36

10 Leisure Activities

- ▷ Music: Classic. Member of the Ulyanovsk Philharmonic Society Friends League
- ▷ Books: English reading & audition
- ▷ Sports: Swimming and skiing

11 References

References available upon request.

Date: January 20, 2014 Signature: 