OLEKSIY VARFOLOMIYEV

Contacts: New Jersey Institute of Technology,
Department of Mathematical Sciences, Newark, NJ 07102,
+1 (609) 787-41-72, ov5@njit.edu
Y/P of birth: 1980, Kharkov, Ukraine

EXPERIENCE:

January 2009 – May 2015
PhD Scholar and Research Assistant at the Department of Mathematical Sciences, New Jersey Institute of Technology and Department of Mathematics and Computer Science, Rutgers University, Newark, NJ, USA.
Academic Advisor: Prof. M. Siegel.
Thesis Title: *An Efficient Boundary Integral Method for Stiff Fluid Interface Problems*

October 2007 – December 2008
PhD Scholar and Research Assistant at the Department of Applied Mathematics and Numerics,
Dortmund University of Technology, Dortmund, Germany, Academic Advisor: Prof. S. Turek.
Contributed to the design and implementation of Finite Elements in the high performance scientific computing package FEAST aimed to solve large-scale problems across a wide variety of modern hardware architectures. Developed numerical methods for the solution of the Interfacial Fluid Dynamics problems.

September 2004 – June 2007
PhD Scholar and Research Assistant at the Department of Control Systems of Processes and Objects, Ukrainian Engineering Pedagogical Academy, Kharkov, Ukraine, Academic Advisor: Prof. B. I. Kuznetsov.
Thesis Title: *Synthesis of the neural network control for the aiming and stabilizing system*

EDUCATION:

Ph. D. in Mathematical Sciences, May 2015
Department of Mathematical Sciences, New Jersey Institute of Technology and Department of Mathematics and Computer Science, Rutgers University, Newark, NJ, USA. Academic Advisor: Prof. M. Siegel.
Thesis Title: *An Efficient Boundary Integral Method for Stiff Fluid Interface Problems*

Ph. D. in Technology, January 2010
Kharkov National University of Technology, Ukraine, Academic Advisor: Prof. B. I. Kuznetsov.
Thesis Title: *Synthesis of the neural network control for the aiming and stabilizing system*

Master's Degree in Applied Mathematics, June 2004 (GPA 5.0/5.0)
Kharkov National University, Ukraine, Academic Advisor: Prof. Yu. V. Gandel.
Diploma Title: *The numerical solution of hypersingular integral equations in 2D problems of diffraction*

Bachelor's Degree in Applied Mathematics, June 2003 (GPA 5.0/5.0)
Kharkov National University, Ukraine, Academic Advisor: Prof. Yu. V. Gandel.
Diploma Title: *About the numerical solution of some hyper singular integral equations*

TEACHING EXPERIENCE:

Lecturer *Differential Equations*, Fall 2011, New Jersey Institute of Technology, Newark, NJ
TA *Numerical Methods, Calculus I-III*, *Probability & Statistics,* New Jersey Institute of Technology, Newark, NJ

SELECTED PUBLICATIONS:

- Kuznetsov B.I., Varfolomiyev O.O., *Synthesis and study of the neural network aiming and stabilization predictive control system for the light-armored vehicles armament*, Kharkiv National University of Radioelectronics, 141, pp. 81-90, Kharkov, 2007
- Kuznetsov B. I., Vasilets T. E., Varfolomiyev O. O., *Neural network generalized predictive control of the nonlinear dynamic objects*, Electrotechnics and Electromechanics, Kharkiv Polytechnic Institute, 4, pp. 34-41, 2008
- Kuznetsov B. I., Vasilets T. E., Varfolomiyev O. O., *Synthesis and study of the aiming and stabilization system of the light-armored vehicles armament with the neural network control based on the autoregressive moving average model*, Armament systems and defense technology, 4, pp. 118-121, 2010
- Stein A., Witelski T., Varfolomiyev O. et al., Dynamic models of metastatic tumor growth, 27th Annual Workshop on Mathematical Problems in Industry, NJIT, Newark, 2011
- Kuznetsov B. I., Vasilets T. E., Varfolomiyev O. O., *Narma-L2 control synthesis for the aiming and stabilization system*, Kharkiv Polytechnic Institute, pp. 14-19, Ukraine, 2011
- Kuznetsov B. I., Kolomiyets V. V., Varfolomiyev O. O. et al. *Synthesis of the reference model neural network control for the nonlinear dynamic objects*, Electrotechnic and Computer Systems, Kyiv, Technics, 3 (79), pp. 451-452, 2011
- Kuznetsov B. I., Vasilets T. E., Varfolomiyev O. O. *Study of the quality performance of the neural network aiming and stabilizing system with the measurement disturbances of the position*, Control systems, navigation and communication, Kyiv, Central Research Institute of Navigation and Control, 1 (17), pp. 94-97, 2011
- Kuznetsov B. I., Vasilets T. E., Nikitina T.B., Kolomiyets V. V., Varfolomiyev O. O. *Neural network technologies in control systems*, Tutorial. Slovyans'k, Motorin, 233 p., 2014
- Siegel M. S., Varfolomiyev O.O., An efficient boundary integral method for stiff fluid interface problems, to appear

Total of 2 textbooks, 29 publications and 7 conference papers.

CONFERENCES/WORKSHOPS:

- Frontiers in Applied and Computation Mathematics, NJIT, Newark, May '09 – '15
- Machine Learning in Finance, Columbia University, Bloomberg LP, New York, March '15
- 27th Annual Workshop on Mathematical Problems in Industry , NJIT, Newark, June '11
- Graduate Students Mathematical Modeling Camp, NJIT, Newark, June '11
- Oberseminar at the Dortmund University of Technology, TU Dortmund, Germany, November '08
- Problems of Informatics and Modeling, Kharkov National University of Technology, Ukraine '08
- Problems of automatic motor controller. Theory and practice, Alushta, Ukraine, '05, '08, '10
- Machine building and techno-sphere of the XXI century, Sebastopol, Ukraine, '05, '08
- 12th International Conference on Automatic Control, Kharkov, Ukraine, '05

FELLOWSHIPS:

- Honors Fellowship, Kharkov National University, Ukraine, September 1997- June 2004.
- Scholarship, SFB / TR TRR 30*, Numerical simulation techniques for multiphase polymer melts,* University of Kassel, Germany, September 2008 – August 2009

ACTIVITIES:

Participated and co-organized a number of international educational programs, boot camps, conferences, clubs.

LANGUAGES:

English (fluent), Russian, Ukrainian (native), German (advanced intermediate).

SUMMARY:

Motivated and creative professional with the international experience in applied mathematics, programming, control systems. Expertise in flexible and efficient solution implementation, algorithm optimization, large projects development. Strong analytic, research and implementation capabilities; significant achievements in applied sciences. Experienced to master new technologies fast as well as to do consulting, training and presenting.