DIMITRY GORINEVSKY, Ph.D., P.Eng.

281 El Verano Ave
Palo Alto, CA 94306

Phone: (650) 400-3172
gorin@stanford.edu
www.stanford.edu/~gorin

PROFESSIONAL WORK

2005–to date *Managing Partner and Chief Scientist*
Mitek Analytics LLC, Palo Alto, CA
Responsible for Industrial IoT Analytics business working with DOD, NASA, utilities, and Fortune 500 companies. PI on 18 externally sponsored research projects.

2002–to date *Consulting Professor*
Information Systems Lab, Dept. of Electrical Engineering, Stanford University
Taught graduate courses, supervised graduate students, was co-PI on 4 multi-year sponsored research projects.

1999–2005 *Senior Staff Scientist*
Honeywell Laboratories, San Jose, CA

1996–2001 *Adjunct Professor*
Dept. of ECE, Univ. of British Columbia, Vancouver, B.C., Canada

1995–1998 *Senior Control Engineer, Product Manager*
Honeywell-Measurex, North Vancouver, B.C., Canada

1995–1999 *Consultant* for Canadian Space Agency, St.-Hubert, Quebec, Canada

1992–1995 *Senior Research Scientist, Canada Research Fellow*
Robotics and Automation Laboratory, University of Toronto, Canada

1991–1992 *Visiting Scientist (Alexander von Humboldt Award)*
Munich University of Technology, Germany

1982–1991 *Research Scientist, Research Engineer*
Inst. for Probl. of Information Transmission, USSR Academy of Sciences, Moscow

CURRENT RESEARCH INTERESTS

Industrial Internet of Things (IIoT) - Analytics applications

Data science, Big Data analytics, data mining, machine learning, decision support

Electrical grid and energy systems: modeling, monitoring, control, and optimization

Aerospace systems: health management, advanced control, data analytics

Risk modeling and analysis: statistical and actuarial models of extreme events.

Data driven modeling, identification, estimation, forecasting, and optimization

Data driven decision support, fault estimation, and reliability analytics

EDUCATION

1986 *Ph.D. in Controls*
Department of Mechanics and Mathematics, Moscow (Lomonosov) University

1976–1982 *M.Sc. with Highest Honors (Flight Dynamics and Control)*
Department of Aerospace Engineering, Moscow Institute of Physics and Technology

AWARDS AND HONORS

2013	Best Paper Award (Senior Award) of the IEEE Signal Processing Society
2006	Elected Fellow of IEEE from Control Systems Society
2004	Transactions on Control Systems Technology Outstanding Paper Award, IEEE CSS
2002	Control Systems Technology Award of the IEEE Control Systems Society
1992	Canada International Research Fellowship, Ottawa, Canada
1990	Alexander von Humboldt International Research Fellowship, Bonn, Germany
1987	The USSR Academy of Sciences Award for Young Scientist Achievements in the Fields of Mathematics, Computing, Mechanics, and Control, Moscow, Russia

AWARDS TO STUDENTS ADVISED

2015	Best Student Paper Award Finalist (co-author/supervisor), American Control Conf.
2012	First Prize for the Best Student Paper (co-author/supervisor), IEEE Internat. Conference on Power System Technology
2010	AIAA Intelligent Systems Best Student Paper Award (co-author/supervisor), AIAA Infotech@Aerospace Conference
2006	IEEE CCA Best Student Paper Award (co-author/supervisor), IEEE CSS
2004	IEEE CCA Best Student Paper Award Finalist (co-author/supervisor), IEEE CSS
1999	IEEE CDC Best Student Paper Award Finalist (co-author/supervisor), IEEE CSS

PROFESSIONAL VOLUNTEER SERVICE

2016–present	LOLE Best Practices Working Group, IEEE Power and Energy Society
2010	Organizing Committee, Area Chair, Conference on Intelligent Data Understanding
2001–2008	Associate Editor, IEEE Transactions on Control Systems Technology
2007–2009	Program Committee, American Control Conference
2005	IEEE Tran. on Control Systems Technology Outstanding Paper Award Commitee
2003–present	IEEE CSS Technical Committee on Aerospace Control
1995–present	IEEE CSS Technical Committee on Intelligent Control
1998–2003	IEEE CSS Technical Committee on Industrial Process Control
2002–2003	Guest Editor, Special Issue on Industrial Distributed System Control, IEEE Transactions on Control Systems Technology
2004	IEEE CCA/ISIC/CACSD Organizing Committee
1997–2002	Associate Editor, Conference Editorial Board
2002	IEEE CDC, Program Committee
2001	IEEE CDC, Organizing Committee
2001, 1996	IEEE ISIC, Program Committee

PUBLICATIONS

About 180 technical papers in refereed journals and conference proceedings

One book published in English and Russian

Sixteen patents

Publication list attached

TEACHING

2016–2018	Industrial Internet of Things: Analytics, Stanford Univ., EE
2013–2015	Intelligent Energy Systems: Big Data, Stanford Univ., EE
2011–2012	Intelligent Energy Systems, Stanford Univ., EE
2009	Fault Diagnostic Systems, Stanford Univ., EE
2003, 2005	Control Engineering in Industry, Stanford Univ., EE
1997	Control Systems, Univ. of British Columbia, ECE
1995	Advanced Robot Mechanics and Control, Univ. of Toronto, ME
1993–1995	Control, Univ. of Toronto, Continuing Education
1978–1982	Physics, Mathematically Gifted Student Program, High School #91, Moscow, Russia

GRADUATE STUDENTS ADVISED

2017–present	Weixuan Gao (M.S./Ph.D.), Stanford Civil and Environmental Engineering.
2013–2016	Saahil Shenoy (Ph.D.), Stanford Applied Physics. Presently with NIO.
2011–2013	Chung-Ching Chang (Ph.D.), Stanford EE. Presently with Google.
2012	Nicholas Moehle (M.S.), Stanford ME. Presently PhD at Stanford EE.
2011–2012	Eric Glover (MS), Stanford EE. Presently with Sargent and Lundy.
2009–2013	Eric Chu (Ph.D.), Stanford EE. Presently with Qadium Solutions.
2007–2009	Argyris Zymnis (Ph.D.), Stanford EE. Presently with Twitter.
2003–2006	Sikandar Samar (Ph.D.), Stanford AA/EE. Presently with Getco.
1999–2001	Leonardo Kammer (Postdoc), UBC ECE. Presently with GE Global Research.
1997–2000	Greg Stewart (Ph.D.), UBC ECE. Presently with Honeywell. IEEE Fellow 2015.
1997–1998	Ming Zhang (M.A.Sc.), UBC ECE.
1988–1990	One Ph.D. and one M.S. student, Moscow University, Dept. of Mech & Math.

PUBLICATIONS

Journal papers

[1] Shenoy, S., Gorinevsky, D., and Laptev N., "Probabilistic modeling of computing resource allocation for service level," *IEEE Trans. on Services Computing*, 2017 (to appear), DOI: 10.1109/TSC.2016.2637929.

[2] Shenoy, S. and Gorinevsky, D., "Data-driven stochastic pricing and application to electricity market," *IEEE Journ. of Selected Topics in Signal Processing*, Vol. 10, No. 6, 2016, pp. 1029–1039.

[3] Chang, C.-C., Gorinevsky, D., and Lall, S., "Stability analysis of distributed power generation with droop inverters," *IEEE Trans. on Power Systems*, Vol. 30, No. 6, 2015, pp. 3295–3303.

[4] Gorinevsky, D., "Data driven fault isolation in multivariate process monitoring," *IEEE Trans. on Control Systems Technology*, Vol. 23, No. 5, 2015, pp. 1840–1852.

[5] Shenoy, S. and Gorinevsky, D., "Estimating long tail models for risk trends," *IEEE Signal Processing Letters*, Vol. 22, No. 7, 2015, pp. 968–972.

[6] Chang, C.-C., Gorinevsky, D., and Lall, S., "Dynamical and spatial stability of inverter-connected distributed power generation," *IEEE Trans. on Smart Grid. Special Issue on Control Theory and Technology in Smart Grid*, Vol. 5, No. 4, 2014, pp. 2093–2105.

[7] Zymnis, A., Boyd, S., and Gorinevsky, D., "Mixed linear system estimation and identification," *Signal Processing*, Vol. 90, No. 3, 2010, pp. 966–971.

[8] Kim, S.-J., Koh, K., Boyd, S., and Gorinevsky, D., "l_1 trend filtering," *SIAM Review*, Vol. 51, No. 2, 2009, pp. 339–360.

[9] Gorinevsky, D., Kim, S.-J., Beard, S., Boyd, S., and Gordon, G., "Optimal estimation of deterioration from diagnostic image sequence," *IEEE Trans. on Signal Processing*, Vol. 57, No. 3, 2009, pp. 1030–1043.

[10] Zymnis, A., Boyd, S., and Gorinevsky, D., "Relaxed maximum a posteriori fault identification," *Signal Processing*, Vol. 89, No. 6, 2009, pp. 989–999.

[11] Kim, S.-J., Koh, K., Lustig, M., Boyd, S., and Gorinevsky, D., "A method for large-scale l_1-regularized least squares problems with applications in signal processing and statistics," *IEEE Journ. of Selected Topics in Signal Processing*, Vol. 1, No. 4, 2008, pp. 606–617.

[12] Gorinevsky, D., Boyd, S., and Stein, G., "Design of low-bandwidth spatially distributed feedback," *IEEE Trans. on Automatic Control*, Vol. 53, No. 2, 2008, pp. 257–272.

[13] Gorinevsky, D. and Boyd, S., "Optimization-based design and implementation of multi-dimensional zero-phase IIR filters," *IEEE Trans. on Circuits and Systems - I*, Vol. 53, No. 2, 2006, pp. 372-383.

[14] Stein, G. and Gorinevsky, D., "Design of surface shape control for large two-dimensional array," *IEEE Trans. on Control Systems Technology*, Vol. 13, No. 3, 2005, pp. 422–433.

[15] Gorinevsky, D. and Farber, G., "System analysis of power transients in advanced WDM networks," *IEEE/OSA Journ. of Lightwave Technology*, Vol. 22, No. 10, 2004, pp. 2245–2255.

[16] Gorinevsky, D. and Stein, G., "Structured uncertainty analysis of robust stability for multidimensional array systems," *IEEE Trans. on Automatic Control*, Vol. 48, No. 8, 2003, pp. 1557–1568.

[17] Kammer, L.C., Gorinevsky, D., and Dumont, G.A., "Semi-intrusive multivariable model invalidation," *Automatica*, Vol. 39, 2003, pp. 1461–1467.

[18] Stewart, G.E., Gorinevsky, D., and Dumont, G.A., "Feedback controller design for a spatially-distributed system: The paper machine problem," *IEEE Trans. on Control Systems Technology*, Vol. 11, No. 5, 2003, pp. 612–628.

[19] Gorinevsky, D. and Gheorghe, C., "Identification tool for cross-directional processes," *IEEE Trans. on Control Systems Technology*, Vol. 11, No. 5, 2003, pp. 629–640.

[20] Gorinevsky, D., Cook, J., and Vukovich, G., "Nonlinear predictive control of transients in automotive VCT engine using nonlinear parametric approximation," *ASME Journ. of Dynam. Systems Meas. and Control*, Vol. 125, No. 3, 2003, pp. 429–438.

[21] Stewart, G.E., Gorinevsky, D., and Dumont, G.A., "Two-dimensional loop shaping," *Automatica*, Vol. 39, No. 5, 2003, pp. 779-792.

[22] Gorinevsky, D., "Loop-shaping for iterative control of batch processes," *IEEE Control Systems Magazine*, Vol. 22, No. 6, 2002, pp. 55–65.

[23] Stewart, G.E., Gorinevsky, D., Dumont, G.A., Gheorghe, C., and Backstroem, J.U., "The role of model uncertainty in cross-directional control systems," *Pulp and Paper Canada*, Vol. 102, No. 10, 2001, pp. T273–T278.

[24] Gorinevsky, D. and Heaven, M., "Performance-optimized applied identification of separable distributed-parameter processes," *IEEE Trans. on Automatic Control*, Vol. 46, No. 10, 2001, pp. 1584–1589.

[25] Gorinevsky, D. and Vukovich, G., "Model-based update in task-level feedforward control using on-line approximation," *Automatica*, Vol. 37, No. 3, 2001, pp. 391-400.

[26] Gorinevsky, D., Heaven, M., and Vyse, B., "Performance analysis of cross-directional process control," *IEEE Trans. on Control Systems Technology*, Vol. 8, No. 4, 2000, pp. 589–600.

[27] Popovic, M.R., Gorinevsky, D.M., and Goldenberg, A.A., "High-precision positioning of a mechanism with nonlinear friction using a fuzzy logic pulse controller," *IEEE Trans. on Control Systems Technology*, 2000 Vol. 8, No. 1, pp. 151–158.

[28] Gorinevsky, D., Vukovich, G., "Control of flexible spacecraft using nonlinear approximation of input shape dependence on reorientation maneuver parameters," *Control Engineering Practice*, Vol. 5, No. 2, 1998, pp. 1661–1671.

[29] Gorinevsky, D.M., Heaven, M., Sung, C., and Kean, M., "Integrated tool for intelligent identification of CD process alignment shrinkage and dynamics," *Pulp and Paper Canada*, Vol. 99, No. 2, 1998, pp. 40–60.

[30] Gorinevsky, D. and Vukovich, G. "Nonlinear input shaping control of flexible spacecraft reorientation maneuver," *AIAA Journ. of Guidance, Control, and Dynamics*, Vol. 21, No. 2, 1998, pp. 264–270.

[31] Gorinevsky, D., "An approach to parametric optimization of nonlinear system and application to task-level learning control," *IEEE Trans. on Automatic Control*, Vol. 42, No. 7, 1997, pp. 912–927.

[32] Gorinevsky, D., Torfs, D, and Goldenberg, A.A., "Learning approximation of feedforward control dependence on task parameters," *IEEE Trans. on Robotics and Automation*, Vol. 13, No. 4, 1997, pp. 567–581.

[33] Gorinevsky, D., Vyse, B., Hagart-Alexander, A., and Heaven, M., "Performance analysis of cross-directional control using multivariable and spectral models," *Pulp and Paper Canada*, Vol. 98, No. 7, 1997, pp.44–47.

[34] Gorinevsky, D.M., Heaven, M. et al., "New algorithms for intelligent identification of paper alignment and nonlinear shrinkage," *Pulp and Paper Canada*, Vol. 98, No. 7, 1997, pp.76–81.

[35] Heaven, M., Gorinevsky, D., Hagart-Alexander, C., and Vyse, B., "Application of the model-based tuning and analysis tools to paper machine control," *Pulp and Paper Canada*, Vol. 98, No. 7, 1997, pp. 54–58.

[36] Gorinevsky, D., "Sampled-data indirect adaptive control of bioreactor using affine Radial Basis Function network approximation," *Trans. ASME. Journ. Dynam. Syst. Meas. and Control*, Vol. 189, No. 1, 1997, pp. 94-98.

[37] Gorinevsky, D. and Feldkamp, L., "RBF network feedforward compensation of load disturbance in idle speed control," *IEEE Control System Magazine*, Vol. 16, No. 6, 1996, pp. 18–27.

[38] Gorinevsky, D., Kapitanovsky, A., and Goldenberg, A.A., "Neural network architecture for trajectory generation and control of automated car parking," *IEEE Trans. on Control Systems Technology*, Vol. 4, No. 1, 1996, pp. 50–56.

[39] Gorinevsky, D., Kapitanovsky A., and Goldenberg A.A., "Radial Basis Function network architecture for nonholonomic motion planning and control of free-flying manipulators," *IEEE Trans. on Robotics and Automation*, Vol. 12, No. 3, 1995, pp. 491–496.

[40] Gorinevsky, D., "On the persistency of excitation in Radial Basis Function network identification of nonlinear systems," *IEEE Trans. on Neural Networks*, Vol. 4, No. 5, 1995, pp. 1237-1244.

[41] Gorinevsky, D., Kapitanovsky, A., and Goldenberg, A.A., "AUTOPASS: Automatic parking support system," *Trans. of SAE. Journ. Passenger Cars*, Vol. 103, Sect. 6, 1994, pp. 1397–1401.

[42] Gorinevsky, D.M., and Connolly, T.H., "Comparison of some neural network and scattered data approximations: The inverse manipulator kinematics example," *Neural Computation*, Vol. 6, No. 3, 1994, pp. 519–540.

[43] Gorinevsky, D.M., "Modeling of direct motor program learning in fast human arm motions," *Biological Cybernetics*, Vol. 69, No. 3, 1993, pp. 219–228.

[44] Gorinevsky, D.M., "Galerkin method in control of distributed flexible systems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 109, 1993, pp. 107–128.

[45] Gorinevsky, D.M., "Experiments in direct learning of feedforward control for manipulator path tracking," *Robotersysteme*, Vol. 8, 1992, pp. 139–147.

[46] Gorinevsky, D.M., Lensky, A.V., and Sabitov, E.I., "Control of flexible link manipulator with gear-train," *Journ. of Robotic Systems*, Vol. 8, No. 5, 1991, pp. 659–677.

[47] Gorinevsky, D.M., and Shneider, A.Yu., "Force control in locomotion of legged vehicles over rigid and soft surfaces," *Intern. Journ. of Robotics Research,* Vol. 9, No. 2, 1990, pp. 4–23.

Books

[B1] Gorinevsky, D.M., Formalsky, A.M., and Shneider, A.Yu. *Force Control of Robotics Systems*, CRC Press, Boca-Raton, FL, 1997 (Russian edition: Moscow, Nauka, 1994)

Book Chapters

[BC1] Gorinevsky, D. "Radial Basis Function network approximation and learning in task-dependent feedforward control of nonlinear dynamical systems," in *Neural Network Systems Techniques and Applications*, *Optimization Techniques*, vol. 2, ed. C.T.Leondes, Academic Press, San Diego, CA, 1998, pp. 353–395

[BC2] Popovic, M. R., Gorinevsky, D., and Goldenberg A.A., "Accurate Positioning of Devices with Nonlinear Friction Using Fuzzy Logic Pulse Controller," in *Lecture Notes in Control and Information Sciences 223 - Experimental Robotics IV, The 4th International Symposium*, Eds. O. Khatib and J. K. Salisbury, Springer, 1997, pp. 331-342.

Conference Papers, Reviewed and Published in Full

[1] Gorinevsky, D., Shenoy, S., Zhao, F., Luo X. , T. Zheng, and E. Litvinov, "Base cases for assessing risk in transmission system planning," *IEEE International Conference on Probabilistic Methods Applied to Power Systems*, June 2018, Boise, ID

[2] Gao, W. and Gorinevsky, D., "Probabilistic balancing of grid with renewables and storage," *IEEE International Conference on Probabilistic Methods Applied to Power Systems*, June 2018, Boise, ID

[3] Shenoy, S. and Gorinevsky, D., "Stochastic optimization of power market forecast using non-parametric regression models," *IEEE PES General Meeting*, July 2015, Denver, CO.

[4] Shenoy, S., Gorinevsky, D., and S.Boyd, "Non-parametric regression modeling for stochastic optimization of power grid load forecast," *American Control Conf.*, July 2015, Chicago, IL.

[5] Shenoy, S. and Gorinevsky, D., "Predictive analytics for extreme events in Big Data ," *IEEE BigDataService*, March 2015, San Francisco, CA.

[6] Shenoy, S. and Gorinevsky, D., "Gaussian-Laplacian mixture model for electricity market," *IEEE Conference on Decision and Control*, Pages 1720–1726, Dec. 2014, Los Angeles, CA.

[7] Shenoy, S. and Gorinevsky, D., "Risk adjusted forecasting of electric power load," *American Control Conference*, Pages 914–919, June 2014, Portland, OR.

[8] Moehle, N. and Gorinevsky, D., "Covariance estimation in two-level regression," *2nd Internat. Conf. on Control and Fault-Tolerant Systems*, October 2013, Nice, France.

[9] Chu, E., Keshavarz, A., Gorinevsky, D., and Boyd, S., "Moving horizon estimation for staged QP problems," *IEEE Conf. on Decision and Control*, December 2012, Waikoloa, HI.

[10] Glover, E., Chang, C.-C., Gorinevsky, D., and Lall, S., "Frequency stability for distributed generation connected through grid-tie inverter," *IEEE POWERCON*, October 2012, Auckland, New Zealand.

[11] Gorinevsky, D., Matthews, B., and Martin, R., "Aircraft anomaly detection using performance models trained on fleet data," *Conf. on Intelligent Data Understanding (CIDU)*, October 2012, Boulder, CO.

[12] Gorinevsky, D., Overman, N. and Goeke, J., "Amplitude and phase control in active suppression of combustion instability," *American Control Conf.*, June 2012, Montreal, QC, Canada.

[13] Gorinevsky, D., "Bayesian fault isolation in multivariate statistical process monitoring," *American Control Conf.*, June 2011, San Francisco, CA.

[14] Chu, E., Gorinevsky, D., and Boyd, S., "Scalable statistical monitoring of fleet data," *18th World IFAC Congress*, August 2011, Milano, Italy.

[15] Chu, E., Gorinevsky, D., and Boyd, S., "Detecting aircraft performance anomalies from cruise flight data," *AIAA Infotech@Aerospace*, April 2010, Atlanta, GA, AIAA-2010-3307.

[16] Gorinevsky, D., Mah, R., Srivastava, A., Smotrich, A., Keller, K. and Felke, T., "Open architecture for data mining and analysis in integrated health management," *AIAA Infotech@Aerospace*, April 2010, Atlanta, GA, AIAA-2010-3434

[17] Gorinevsky, D., and Smotrich, A., "Open architecture for data mining and analysis in integrated health management," *JANNAF JPM/MSS/LPS/SPS Meeting*, Colorado Springs, CO, May 2010

[18] Zymnis, A., Boyd, S. and Gorinevsky, D., "Mixed linear system estimation and identification," *IEEE Conf. on Decision and Control*, Shanghai, China, December 2009

[19] Gorinevsky, D., Boyd, S. and Poll. S., "Estimation of faults in DC electrical power system," *American Control Conf.*, St. Louis, MO, June 2009

[20] Zymnis, A., Boyd, S., and Gorinevsky, D., "Mixed state estimation for a linear gaussian markov model," *IEEE Conf. on Decision and Control*, Cancun, Mexico, December 2008

[21] Gorinevsky, D., "Efficient filtering using monotonic walk model," *American Control Conf.*, Seattle, WA, June 2008

[22] Gorinevsky, D., Hoffman, G., Shmakova, M., Mah. R., Cryan, S., and Mitchell, J., "Fault tolerance of relative navigation sensing in docking approach of spacecraft," *IEEE Aerospace*, Big Sky, MT, March 2008

[23] Gorinevsky, D., Kim, S.-J., Boyd, S., Beard, S., Gordon, G., and Chang, F.-K., "Optimal estimation of accumulating damage trend from a series of SHM images," *Intern. Workshop on Structural Health Monitoring*, Stanford University, Stanford, CA, September 11-13, 2007

[24] Hoffmann, G.M., Gorinevsky, D., Mah, R.W., Tomlin, C.J., and Mitchell, J.D., "Fault tolerant relative navigation using inertial and relative sensors," *AIAA Guidance, Navigation, and Control Conf.*, August 2007, Hilton Head, SC

[25] Gorinevsky, D., Mah, R.W. , and Timucin, D., "Early detection of solid rocket motor failures for safe crew launch abort," *AIAA Guidance, Navigation, and Control Conf.*, August 2007, Hilton Head, SC

[26] Samar, S., Boyd, S., and Gorinevsky, D., "Distributed estimation via decomposition methods," *European Control Conference*, Island of Kos, Greece, July 2007.

[27] Gorinevsky, D., "Optimal estimate of monotonic trend with sparse jumps," *American Control Conf.,* New York, NY, July 2007

[28] Samar, S., Gorinevsky, D., and Boyd, S., "Embedded Estimation of Fault Parameters in an Unmanned Aerial Vehicle," *IEEE Conf. on Control Applications*, Munich, Germany, October 2006. (2006 IEEE CCA Best Student Paper Award)

[29] Gorinevsky, D. and Gordon, G., "Spatio-temporal filter for structural health monitoring," *American Control Conf.,* Minneapolis, MN, June 2006

[30] Samar, S., Gorinevsky, D., and Boyd, S. "Model predictive estimation of evolving faults," *American Control Conf.,* Minneapolis, MN, June 2006

[31] Samar, S., Gorinevsky, D., and Boyd, S., "Likelihood bounds for constrained estimation with uncertainty," *IEEE Conf. on Decision and Control and ECC'05*, Seville, Spain, December 2005.

[32] Gorinevsky, D., "Feedback loop design and analysis for iterative localized image deblurring," *IEEE Conf. on Decision and Control and ECC'05*, Seville, Spain, December 2005.

[33] Gorinevsky, D., Gordon, G.A., Beard, S., Kumar, A., and Chang, F.-K., "Design of integrated SHM system for commercial aircraft applications," *Intern. Workshop on Structural Health Monitoring*, Stanford, CA, September 2005.

[34] Gorinevsky, D., Samar, S., Bain, J., and Aaseng, G., "Integrated diagnostics of rocket flight control," *IEEE Aerospace*, Big Sky, MN, March 2005.

[35] Samar, S., Gorinevsky, D., and Boyd, S., "Moving horizon filter for monotonic trends," *IEEE Conf. on Decision and Control*, Paradise Island, Bahamas, December 2004.

[36] Ganguli, S., Deo, S., and Gorinevsky, D., "Parametric fault modeling and diagnostics of a turbofan engine," *IEEE Conf. on Control Applications*, pp. 223–228, Taipei, Taiwan, September 2004.

[37] Gorinevsky, D., "Monotonic regression filters for trending gradual deterioration faults," *American Control Conf.*, pp. 5394–5399, Boston, MA, June 2004.

[38] Stein, G. and Gorinevsky, D., "Design of surface shape control for large two-dimensional array," *IEEE Conf. on Decision and Control*, pp. 1327–1332, Lahaina, HI, December 2003.

[39] Gorinevsky, D., Boyd, S., and Stein, G., "Optimization-based tuning of low-bandwidth control in spatially distributed systems," *American Control Conf.*, Vol. 3, pp. 2658–2663, Denver, CO, June 2003.

[40] Gorinevsky, D., Mylaraswamy, D., and Nwadiogbu, E., "Model-based diagnostics for small-scale turbomachines," *IEEE Conf. on Decision and Control*, Vol. 4, pp. 4784–4789, Las Vegas, NV, December 2002

[41] Gorinevsky, D., Dittmar, K., Mylaraswamy, D., and Nwadiogbu, E., "Model-based diagnostics for an aircraft auxiliary power unit," *IEEE Conf. on Control Applications*, Vol. 1, pp. 215–220, Glasgow, Scotland, September 2002.

[42] Gorinevsky, D. and Hyde, T.T., "Adaptive membrane for large lightweight space telescopes," *SPIE Astronomical Telescopes and Instrumentation*, Waikoloa, HI - August, 2002. SPIE Paper # 4849-44. *Proceedings of SPIE - The International Society for Optical Engineering*, Vol. 4849, 2002, pp.330–338

[43] Gorinevsky, D. and Farber, G., "System analysis of power transients in advanced WDM networks," *SPIE Photonics West*, San Jose, CA, January 2002. SPIE Paper # 4653-06. *Proceedings of SPIE - The International Society for Optical Engineering*, Vol. 4653, 2002, pp.27–35.

[44] Samad, T., Gorinevsky, D., and Stoffelen, F., "Dynamic multiresolution route optimization for autonomous aircraft," *IEEE ISIC*, 2001, p.13-18, Mexico City, Mexico

[45] Kammer, L.C., Gorinevsky, D., and Dumont, G.A., "Semi-intrusive multivariable model invalidation", *European Control Conference*, Porto, Portugal, 2001

[46] Gorinevsky, D., Hyde, T., and Cabuz, C., "Distributed shape control of lightweight space reflector structure," *IEEE Conf. on Decision and Control*, Orlando, FL, December 2001.

[47] Gorinevsky, D., Hyde, T., and Cabuz, C., "Distributed localized shape control of gossamer space structures," *AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Seattle, WA, Apr. 16-19, 2001, AIAA-2001-1197

[48] Gorinevsky, D. and Stein G., "Structured uncertainty analysis of spatially distributed paper machine process control," *American Control Conf.*, pp. 2225–2230, Arlington, VA, July 2001.

[49] Stewart, G.E., Baker, P., Gorinevsky, D.M., and Dumont, G.A., "An experimental demonstration of recent results for spatially distributed control systems," *American Control Conf.*, Vol. 3, pp. 2216–2221, Arlington, VA, July 2001.

[50] Gorinevsky, D., and Mylaraswamy, D., "Designing model-based fault estimator for a separation column," *American Control Conf.*, Vol. 2, pp. 1765–1770, Arlington, VA, July 2001.

[51] Gorinevsky, D., and Stein G., "Structured uncertainty analysis of robust stability for spatially distributed systems," *IEEE Conference on Decision and Control*, Vol. 4, pp. 3757 -3762, Sydney, Australia, December 2000.

[52] Duncan, S., Dumont, G.A., and Gorinevsky, D., "Performance monitoring for cross-directional control systems," *Control Systems 2000*, pp. 173–177, Victoria, BC, May 2000.

[53] Stewart, G.E., Gorinevsky, D., Dumont, G.A., Gheorghe, C., and Backstroem, J.U., "The role of model uncertainty in cross-directional control systems," *Control Systems 2000*, pp. 337-345, Victoria, BC, May 2000.

[54] Gorinevsky, D., and Stein G., "Uncertainty models for control of distributed actuator and sensor arrays," SPIE Paper #3984-50, *SPIE 7th Annual Intern. Symposium on Smart Structures and Materials*, March 2000, Newport Beach, CA. *Proceedings of SPIE - The Intern. Society for Optical Engineering*, Vol. 3984, 2000, pp. 415-424

[55] Stewart, G.E., Gorinevsky, D., and Dumont, G.A., "H_2 loopshaping controller design for spatially distributed systems," *IEEE Conf. on Decision and Control*, Vol. 1, pp. 203–208, Phoenix, AZ, December 1999.

[56] Fenu, G., Gorinevsky, D., and Parisini, T., "Nonparametric kernel smoothing and FIR filtering for model-free symptom generation," *IEEE Conf. on Decision and Control*, Vol. 5, pp. 4996–5001, Phoenix, AZ, December 1999.

[57] Gorinevsky, D., "Distributed system loopshaping design of iterative control for batch processes," *IEEE Conf. on Decision and Control*, pp. 203–208, Phoenix, AZ, December 1999

[58] Stewart, G.E., Gorinevsky, D.M., and Dumont, G.A., "Spatial loopshaping tuning for consistency profile control," *IEEE Advanced Process Control Applications for Industry Workshop*, pp. 50–57, Vancouver, Canada, April 1999.

[59] Stewart, G.E., Gorinevsky, D.M., and Dumont, G.A., "Spatial loopshaping: A case study on cross-directional profile control," *American Control Conf.*, pp. 3098–3103, San Diego, CA, June 1999

[60] Duncan, S.R., Dumont, G.A., and Gorinevsky, D.M., "Evaluating the performance of cross-directional control systems," *American Control Conf.*, San Diego, CA, June 1999

[61] Gorinevsky, D., Cook, J., Feldkamp, L., and Vukovich, G., "Predictive design of linear feedback/feedforward controller for automotive VCT engine," *American Control Conf.*, San Diego, CA, June 1999

[62] Gorinevsky, D., Heaven, M., and Gheorghe, C., "High-performance identification of cross-directional processes," *Control Systems '98*, pp. 347–354, Porvoo, Finland, Sept. 1998

[63] Samad, T., Gorinevsky, D., et al "Neural network technology for tuning process control systems," *Control Systems '98*, Porvoo, Finland, Sept. 1998

[64] Stewart G.E., Gorinevsky, D., and Dumont G.A, "Optimal tuning for robust cross-directional control of paper machines," *Control Systems '98*, pp. 314–321, Porvoo, Finland, Sept. 1998

[65] Zhang M., Gorinevsky, D., and Dumont G.A., "Tuning feedback controller of paper machine for optimal disturbance rejection," *Control Systems'98*, pp. 220–227, Porvoo, Finland, Sept. 1998.

[66] Stewart, G.E., Gorinevsky, D., and Dumont G., "Robust GMV Cross Directional Control of Paper Machines," *American Control Conf.*, pp. 3002-3006, Philadelphia, PA, June 1997.

[67] Gorinevsky, D. and Heaven, M., "Performance-optimized identification of cross-directional control processes," *IEEE Conf. on Decision and Control*, San-Diego, CA, Dec. 1997, pp. 1872–1877.

[68] Gorinevsky, D. and Vukovich, G., "Robust convergence of learning update in task-dependent feedforward control," *IEEE Conf. on Decision and Control*, pp. 4708–4713, San-Diego, CA, December 1997.

[69] Gorinevsky, D.M. and Heaven, M., "Automated identification of actuator mapping in cross-directional control of paper machine," *American Control Conf.*, pp. 3400–3404, Albuquerque, NM, June 1997.

[70] Gorinevsky, D.M. "On regularized feedback update of distributed-parameter systems in control and nonlinear estimation applications," *American Control Conf.*, pp. 1823–1827, Albuquerque, NM, June 1997.

[71] Heaven, M., Gorinevsky, D.M., Sung, C., and Kean, M., "Multivariable identification of paper machine cross-directional process using an automated tool," *1997 Dynamic Modeling and Control Applications for Industry Workshop of IEEE Industrial Applications Society*, pp. 56–61, Vancouver, Canada, May 1997.

[72] Gorinevsky, D.M., Heaven, M., Sung, C., and Kean, M., "Advanced on-line automated identification tool for mapped and multivariable cross-directional control," *XIV IMEKO World Congress/CD Symposium*, pp. 162-167, Finland, June 1997.

[73] Gorinevsky, D.M., Heaven, M., Sung, C., and Kean, M., "Integrated tool for intelligent identification of CD process alignment shrinkage and dynamics," *83rd Annual Meeting, Technical Section CPPA*, January 1997, pp. B273-B279.

[74] Gorinevsky, D.M., Vyse, B., and Heaven, M., "Analysis of cross-directional control performance using multivarible and spectral models," *IEEE Conf. on Control Applications*, Dearborn, MI, September 1996.

[75] Gorinevsky, D., and Vukovich G., "Nonlinear input shaping control of flexible spacecraft reorientation maneuver," *IEEE Conf. on Control Applications*, Dearborn, MI, Sept. 1996.

[76] Gorinevsky, D., and Feldkamp, L., "On-line optimization of RBF network feedforward compensation for load disturbance in idle speed control of automotive engine," *IEEE Conf. on Control Applications*, Dearborn, MI, September 1996.

[77] Gorinevsky D. and Vukovich G., "Control of flexible spacecraft using nonlinear approximation of input shape dependence on reorientation maneuver parameters," *13th World Congress of IFAC*, San Francisco, CA, June 1996.

[78] Gorinevsky, D.M., Vyse, B., et al., "Performance analysis of cross-directional control using multivriable and spectral models," *Control Systems '96*, pp. 9–14, Halifax, N.S., Canada, April 1996.

[79] Gorinevsky, D.M., Heaven, M., et al., "New algorithms for intelligent identification of paper alignment and nonlinear shrinkage," *Control Systems '96*, pp. 41–47, Halifax, N.S., Canada, April 1996.

[80] Burma, G., Vyse, R., Gorinevsky, D., and Heaven, M., "CD caliper control requirements for soft nip calenders," *The World Pulp and Paper Week - 5th Conference on New Availabe Techniques*, Stockholm, Sweden, 1996.

[81] Heaven, M., Gorinevsky, D., et al., "Application of the model-based tuning and analysis tools to paper machine control," CPPA EXFOR'96.

[82] Popovic, M., Gorinevsky, D., and Goldenberg, A.A., "Novel controller using fuzzy logic interpolation for accurate positioning under conditions of nonlinear low-velocity friction," *IEEE Conf. on Decision and Control*, pp. 267–272, New Orleans, LA, December 1995.

[83] Gorinevsky, D., Heaven, M., et al., "Automated identification of web shrinkage and alignment in paper and film machines," *IEEE Intern. Conf. on Systems, Man, and Cybernetics*, pp. 3358–3362, Vancouver, B.C., October 1995.

[84] Popovic, M., Gorinevsky, D., and Goldenberg, A.A., "Accurate positioning of devices with nonlinear friction using fuzzy logic pulse controller," *Intern. Symp. on Exper. Robotics, ISER'95*, Stanford, CA, June 1995, pp. 206–211.

[85] Popovic, M., Gorinevsky, D., and Goldenberg, A.A., "A study of response to short torque pulses and fuzzy control of positioning for devices with stick-slip friction," *IEEE Conf. on Control Applications*, Albany, N.Y., September 1995.

[86] Gorinevsky, D., "An application of on-line parametric optimization to task-level learning control," *American Control Conf.*, pp. 862–866, Seattle, WA, June 1995.

[87] Gorinevsky, D., Torfs, D., and Goldenberg, A.A., "Learning approximation of feedforward dependence on the task parameters: Experiments in direct-drive manipulator tracking," *American Control Conf.*, pp. 883–887, Seattle, WA, June 1995.

[88] Popovic, M., Gorinevsky, D., and Goldenberg, A.A., "Fuzzy logic controller for accurate positioning of direct-drive mechanism using force pulses," *IEEE Intern. Conf. on Robotics and Automation*, Nagoya, Japan, May 1995.

[89] Gorinevsky, D.M., "An algorithm for on-line parametric nonlinear least square optimization," *IEEE Conf. on Decision and Control*, Lake Buena Vista, FL, December 1994.

[90] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A., "RBF network architecture for on-line motion planning and attitude stabilization of free-floating manipulator system," *2nd IARP (International Advanced Robotics Program) Workshop on Robotics in Space*, Canadian Space Agency, St.-Huibert, Quebec, July 1994.

[91] Gorinevsky, D.M., "On the persistensy of excitation in Radial Basis Function network identification of nonlinear systems," *American Control Conf.*, Baltimore, MD, June 1994, pp. 1442–1443.

[92] Gorinevsky, D.M., "Periodic adaptive stabilization of the unstable nonminimum phase system," *American Control Conf.*, Baltimore, MD, June 1994, pp. 2995–2999.

[93] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A., "Network architecture and controller design for automated car parking," *American Control Conf.*, Baltimore, MD, June 1994, pp. 806–810.

[94] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A., "On-line approximation of control programs for a class of nonlinear free-flying systems," *American Control Conf.*, Baltimore, MD, June 1994, pp. 152–156.

[95] Torfs, D., Gorinevsky, D.M., and Goldenberg, A.A., "Experiments in feedforward shaping control of direct-drive robot using RBF network," *IEEE World Congress on Computat. Intelligence*, Orlando, FL, June 1994.

[96] Gorinevsky, D.M., "Learning task-dependent input shaping control using Radial Basis Function network," *IEEE World Congr. on Computational Intelligence*, Orlando, FL, June 1994.

[97] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A., "RBF network architecture for motion planning and attitude stabilization of nonholonomic spacecraft/manipulator systems," *IEEE Intern. Conf. on Robotics and Automation*, San-Diego, CA, May 1994.

[98] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A., "AUTOPASS: Automatic parking support system," *SAE Int. Congress*, Detroit, MI, March 1994. SAE Paper #741000.

[99] Gorinevsky, D.M., "Multirate indirect adaptive control of a bioreactor using a novel Radial Basis Function network architecture," *Intelligent Control Systems.* ed. C.W. de Silva and R. Shoureshi, DSC-Vol. 48, ASME, 1993, pp. 67–74.

[100] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A., "An architecture for control of car motion and application to parking," *Advanced Automotive Technologies*, ed. M. Ahmadian, DSC-Vol. 52, ASME, 1993, pp. 305–310.

[101] Gorinevsky, D.M., "Adaptive learning of feedforward control using Radial Basis Function network approximation," *1993 IEEE Intern. Symp. on Intelligent Control*, pp. 762–767, Chicago, IL, August 1993.

[102] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "Intelligent control of nonholonomic space systems using Radial Basis Function network," *Advances in Robust and Nonlinear Control*, ed. E.A.Misawa, DSC-Vol. 53, ASME, 1993, pp. 1–8.

[103] Gorinevsky, D.M., and Connolly, T.H., "Comparison of inverse manipulator kinematics approximations from scattered input-output data using ANN-like methods," *American Control Conf.*, San-Francisco, CA, June 1993, pp. 751–755.

[104] Gorinevsky, D.M., "Direct learning of feedforward control for manipulator path tracking," *IEEE Int. Symp. on Intelligent Control*, pp. 42–47, Glasgow, UK, August 1992.

[105] Gorinevsky, D.M., "Learning open-loop terminal control," *American Control Conf.*, Vol. 3, pp. 1900–1901, Chicago, IL, June 1992,

[106] Gorinevsky, D.M. "Galerkin approximation in control of distributed parameter flexible systems," *European Control Conf.*, Vol. 1, pp. 61–65, Grenoble, July 1991.

[107] Gorinevsky, D.M., "Learning and appoximation in database for feedforward control of flexible manipulator," *Intern. Conf. on Advanced Robotics*, Vol.1, pp. 688–692, Pisa, June 1991.

[108] Gorinevsky, D.M., and Shneider, A.Yu., "Force control in locomotion of legged vehicles over rigid and soft surfaces," *Intern. Conf. on Advanced Robotics*, Vol.1, pp. 609–612, Pisa, June 1991.

[109] Gorinevsky, D.M., "Problems of flexible manipulator link control," *Intern. Symp. on Foundations of Robotics*, pp. 1–10, Holzhau, Germany, 1990.

[110] Diesing, H., Gorinevsky, D., Schneider, A., and Schmucker, U., "Some problems of automated calibration of force/torque sensors," *Intern. Symp. on Foundations of Robotics*, Holzhau, Germany, 1990.

[111] Gurfinkel V.S., Gorinevsky D.M., Gurfinkel E.V. et al., "Control of adaptive walking robot," *10th IFAC World Congress*, Vol. 4, pp. 218–225, Munich, 1987.

[112] Gurfinkel, V.S., Gorinevsky, D.M., Lizunov, A.V. et al. "Control of manipulator with force sensing capability," *5th IFAC/IFIP/IFORCE/IMACS Symp. on Information-Control Problems in Manufacturing Technology*, Suzdal, 1986.

Russian Journal Papers Peer Reviewed, Published in Full, and Translated to English

[R1] Gorinevsky D.M. (1992) "On the approximate inversion of linear system and quadratic-optimal control," *Journ. Comput. Syst. Sci. Int.*, Vol. 30, No. 6, pp. 6–23.

[R2] Gorinevsky, D.M. (1990) "Stabilization of angular position of viscoelastic beam by means of finite-dimensional state-feedback controller," *Automation and Remote Control*, No. 10, pp. 183–185.

[R3] Gorinevsky, D.M. (1990) "Stabilization of infinite-dimensional linear systems using finite-dimensional state controllers," *Automation and Remote Control*, Vol. 51, No. 9, Part 1, pp. 1176–1181.

[R4] Gorinevsky, D.M. (1990) "Method of Bubnov-Galerkin in problems of distributed flexible system control," *Soviet Physics Doklady*, Vol. 35, No. 5, pp. 439–441.

[R5] Gorinevsky D.M. and Lizunov A.B. (1989) "Controlling manipulator with structural elasticity using a force-torque sensor," *Automation and Remote Control*, Vol. 50, No. 3, Part 1, pp. 305-314.

[R6] Gorinevsky D.M. and Zvjagina T.Yu. (1988) "Active damping of flexible link vibrations," *Mech. Solids*, Vol. 23, No. 5, pp 27–33.

[R7] Gorinevsky D.M. and Shneider A.Yu. (1987) "Dynamics of small motions of a walking robot when there is feedback to the support reactions," *Mech. Solids*, Vol. 22, No. 6, pp. 37–46.

[R8] Gorinevsky D.M., Lensky A.V., and Shneider A.Y. (1986) "Dependence of the natural frequencies of a force-moment manipulator sensor on the design parameters," *Mosc. Univ. Mech. Bull.,* Vol. 41, No. 3, pp. 10–16.

[R9] Gorinevsky D.M. and Formal'sky A.M. (1985) "Stability of an elastic manipulator with force feedback," *Mech. Solids*, Vol. 20, No. 3, pp. 48–56.

[R10] Gorinevsky D.M. (1985) "Deceleration of an oscillatory system," *Mech. Solids*, Vol. 20, No. 4, pp. 52–56.

[R11] Gorinevsky D.M. (1983) "Dynamics of a manipulator with allowance for compliance of the joints," *Mech. Solids*, Vol. 18, No. 6, pp. 37–43.

[R12] Gorinevsky D.M. and Kireeva T.Yu. (1983) "Measurement of human muscle stiffness depending on its length," *Fiziologija Cheloveka (Human Physiology)*, 1983, Vol. 9, No. 2, pp. 330-336 (in Russian)