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PROFESSIONAL EXPERIENCE

2010 – present	**Associate Professor** Department of Mathematical Sciences George Mason University, Fairfax, Virginia
2004 – 2010	**Assistant Professor** Department of Computational and Data Sciences Department of Mathematical Sciences George Mason University, Fairfax, Virginia
2005 – present	Center for Simulation and Modeling, George Mason University
2002 – 2004	**Post-doctoral Research Associate** Department of Operations Research and Financial Engineering Princeton University, Princeton, New Jersey

EDUCATION

1997 – 2002	**Ph.D. in Information Technology** Thesis: Primal-Dual Nonlinear Rescaling methods in constrained optimization. George Mason University, Fairfax, Virginia
1993 – 1994	**M. Sc. in Applied Mathematics** Thesis: Two sector Ramsey model of capital accumulation with phase constraints. A turnpike theorem for the dynamic Leontief production model with inventories. Moscow State University, Moscow, Russia
1989 – 1993	**B. Sc. In Applied Mathematics** Moscow State University, Moscow, Russia

AWARDS

2008	Annual Alan Berman Research Publication Award for the paper "Effects of distance and driving force on photoinduced electron transfer between photosynthetic reaction centers and gold electrodes"
2009	Annual National Research Council Research Publications Award for the paper "Electrochemically Controlled Conductance Switching in a Single Molecule: Quinone-Modified Oligo(phenylene vinylene)"

COURSEBOOK

I. Griva, S. G. Nash and A. Sofer, "Linear and Nonlinear Optimization", SIAM, Philadelphia, 2009

PATENTS

2007	US Patent 7,184,992 "Constrained Optimization Tool", with R. Polyak
2010	US Patent 7,840,505 "Classification Tool", with R. Polyak, S. Ho

PUBLICATIONS

I. Griva, "To rescale or to project? Solving Quadratic programming problems with Lagrange multipliers methods", to appear in Pure and Applied Functional Analysis in 2023.

I. Griva, R. Polyak, "Numerical aspects of finding Nonlinear Production – Consumption Equilibrium", Communications in Optimization Theory (23), 1-9, 2023.

M. Aregbesola, and I. Griva, "A Fast Algorithm for Training Large Scale Support Vector Machines", Journal of Computer and Communications, 10(12), 2022.

P. Chatzigiannis, F. Baldimtsi, I. Griva, J.S. Li, "Diversification across mining pools: optimal mining strategies under PoW," JOURNAL OF CYBERSECURITY, 8(1), 2022.

Y.J. Wei, R.X. Yang, J. Kinser, O. Gkountouna, "An Advanced Artificial Intelligence System for Identifying the Near-Core Impact Features to Tropical Cyclone Rapid Intensification from the ERA-Interim Data", Atmosphere, Volume 13, Issue 5, May 2022.

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S. Levyang, I. Griva, "Investigating Functional Roles for Positive Feedback and Cellular Heterogeneity in the Type I Interferon Response to Viral Infection", Viruses 10(10):517, 2018.

I. Griva, "Convergence analysis of augmented Lagrangian - fast projected gradient method for convex quadratic problems", Pure and Applied Functional Analysis, 3(3), 417-428, 2018.

N. Lebedev, M. D. Yates, I. Griva, L.M. Tender, "Internal Redox Polarity of an Individual G-sulfurreducens Bacterial Cell Attached to an Inorganic Substrate", ChemPhysChem, 19(15), 1820-1829, 2018.

N. Lebedev, I. Griva, A. Blom, L.M. Tender, "Effect of iron doping on protein molecular conductance", Physical Chemistry Chemical Physics, 20(20), 14072-14081, 2018.

S. Leviyang, I. Griva, S. Ita, W. Johnson, "A penalized regression approach to haplotype reconstruction of viral populations arising in early HIV/SIV infection", Bioinformatics, 33 (16), 2455-2463, 2017.

D. Malakhov, I. Griva, "On a number of inflection points of activity curves for a regular solution", Canadian Metallurgical Quarterly, 56(3), 368-369, 2017.

V. Bloom, I. Griva, F. Quijada, "Fast Projected Gradient Method for Support Vector Machines", Optimization and Engineering, 17, 651–662, 2016.

N. Lebedev, I. Griva, W. Dressick, J. Phelps, J. E. Johnson, Y. Meshcheriakova, G. Lomonossoff, C. Soto, "A virus-based nanoplasmonic structure as a surface-enhanced Raman biosensor", Biosensors Bioelectronics, 77, 306-314, 2016.

N. Lebedev, S. Mahmud, I. Griva, A. Blom, L. M. Tender, "On the Electron Transfer through Geobacter sulfurreducens PilA Protein", Journal of Polymer Science, Part B: Polymer Physics, 53 (24), 1706-1717, 2015.

F. Mihai, I. Youn, I. Griva, P. Seshaiyer "Computational Methods for Coupled Fluid-Structure-Electromagnetic Interaction Models with Applications to Biomechanics", Mathematical Problems in Engineering, article number 253179, 2015.

J. Snider, I. Griva, X. Sun, M. Emelianenko, "Set Based Framework for Gibbs Energy Minimization," CalPhad - Computer Coupling of Phase Diagrams and Thermochemistry, 48, 18-26, 2015.

V. Bloom, I. Griva, B. Kwon, A. Wolff, "Exterior-Point Method for Support Vector Machines", IEEE Transactions on Neural Networks and Learning Systems, 25(7), 1390-1393, 2014.

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Atom by Chelating Porphyrin", Journal of Physical Chemistry C, 117, 6933-6939, 2013.

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N. Lebedev, S. Trammell, W. Dressick, G.S. Kedziora, I. Griva, J.M. Schnur, "Structural Reorganizations Control Intermolecular Conductance and Charge Trapping in Paraquat-Tetraphenylborate Inverse Photochemical Cell", Photochemistry and Photobiology, 87(5), 1024-1030, 2011.

I. Griva, R. Polyak, "Proximal point nonlinear rescaling method for convex optimization", Numerical Algebra, Control and Optimization, 1(2), 283-299, 2011.

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I. Griva, J.M. Schnur, N. Lebedev, "The Role of Electrode Curvature in Controlling Electron Transfer between the Photosynthetic Reaction Center Protein and Gold Nanoelectrodes", Chemphyschem, 11(17), 3589-3591, 2010

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S. Tsoi, I. Griva, S.A. Trammell, G.S. Kedziora, J.M. Schnur, N. Lebedev, "Observation of two discrete conductivity states in quinone-oligo(phenylene vinylene)", Nanotechnology 21(8), Article number 085704, 2010.

F. Alemi, H. Erdman, I. Griva, C. H. Evans, "Improved Statistical Methods Are Needed to Advance Personalized Medicine", The Open Translational Medicine Journal, **1**, 16-20, 2009.

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I. Griva, D. Shanno, R. Vanderbei, H. Benson, "Global Convergence of a Prima-Dual Interior-Point Method for Nonlinear Programming," Algorithmic Operations Research, **3** (1), 12-29, 2008.

I. Griva, R. Polyak, "1.5-Q-Superlinear Convergence of an Exterior-Point Method for Constrained Optimization," Journal of Global Optimization, **40** (4), 679-695, 2008.

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R. Polyak, S. Ho, I. Griva, "Support Vector Machine via Nonlinear Rescaling Method," Optimization Letters, 1, pp 367-378, 2007.

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I. Griva, R. Polyak, "Primal-Dual Nonlinear Rescaling Method with Dynamic Scaling Parameter Update", Mathematical Programming **106** (2), pp 237-259, 2006.

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I. Griva, "Numerical Experiments with an Interior-Exterior Point Method for Nonlinear Programming", Computational Optimization and Applications, **29** (2), pp. 173-195, 2004.

M. Adibi, R. Polyak, I. Griva, L. Mili, S. Ammari, "Optimal Transformer Tap Selection Using Modified Barrier-Augmented Lagrangian Method", IEEE Transactions on Power Systems, **18** (1), pp. 251-257, 2003.

R. Polyak, I. Griva, J. Sobieszczanski-Sobieski, "Nonlinear Rescaling in Discrete Minimax", in: Nonsmooth / Nonconvex Mechanics: Modeling, Analysis, Numerical Methods, eds. D. Gao, R. Ogden, G. Stavroulakis, Kluwer Academic Publisher, pp. 302 – 330, 2000.

CONFERENCE PROCEEDINGS

P. Mani, C. Domeniconi, and I. Griva, "Unsupervised selective manifold regularized matrix factorization", "Proceedings of the 2021 SIAM International Conference on Data Mining, May, 2021"

J. Grewe, I. Griva, "Optimizing Heterogeneous Maritime Search Teams using an Agent-based Model and Nonlinear Optimization Methods", PROCEEDINGS OF THE 11TH INTERNATIONAL CONFERENCE ON OPERATIONS RESEARCH AND ENTERPRISE SYSTEMS (ICORES), November 2021.

J. Grewe, I. Griva, "Optimizing Searchers that can Transport and Deploy another Searcher using an Agent Based Model and Nonlinear Optimization Methods in a Maritime Domain", Proceedings of the 10th International Conference on System Modeling and Optimization, Munich, Germany, 2021.

J. K. Leung, I. Griva, and W. G. Kennedy, "Making Cross-Domain Recommendations by

Associating Disjoint Users and Items Through the Affective Aware Pseudo Association Method", Proceedings of the 2nd International Conference on Natural Language Processing, Information Retrieval and AI (NIAI), pp. 113-129, 2021.

J. K. Leung, I. Griva, and W. G. Kennedy, "Using Affective Aware Pseudo Association Method to Connect Disjoint Users and Items for Making Cross-Domain Recommendations", Proceedings of the 12th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management - Volume 1: KDIR, 161-168, 2020.

J. K. Leung, I. Griva, and W. G. Kennedy, "Text-based Emotion Aware Recommender", Proceedings of the International Conference on Natural Language Computing and AI (NLCAI2020), London, United Kingdom, pp. 101-114, 2020.

C. Caiseda, I. Griva, L. Martinez, K. Shaw and D. Weingarten, "Numerical Optimization Technique for Optimal Design of the n Grooves Surface Plasmon Grating Coupler", Edited by: D. Abramson, M. Lees, VV. Krzhizhanovskaya, J. Dongarra, PMA Sloot, 2014 INTERNATIONAL CONFERENCE ON COMPUTATIONAL SCIENCE, Book Series: Procedia Computer Science Volume: 29, 2145-2151, 2014.

N. Egge, A. Brodsky, I. Griva, "An Efficient Preprocessing Algorithm to Speed-Up Multistage Production Decision Optimization Problems", In Proceedings of the 46th annual Hawaii International Conference on System Sciences (HICSS-46), IEEE Conference Publications, 1124 - 1133, 2013.

N. Egge, A. Brodsky, I. Griva, "Online Optimization through Preprocessing for Multi-stage Production Decision Guidance Queries", IEEE 28th International Conference on Data Engineering (ICDEW), IEEE Conference Publications, 41- 48, 2012.

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R. Polyak, I. Griva, J. Sobieszczanski-Sobieski, "The Newton Log-Sigmoid method in Constrained Optimization", Proceedings of the AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, pp. 2193 – 2201, 1998.

Current Thesis Advisor for the Following Ph.D. Students: William Ampeh, Bruce Goldfeder, Krishna Neupane, Francis Opoku, Jason Chu.

Former Ph.D. Students advised: Carmen Caiseda, Ph.D in CSI, (graduated in Summer 2012), Felix Mihai, Ph.D in CSI, (graduated in December 2012), Veronica Bloom, Ph.D in CSI, (graduated in 2014), Joel Mejeur, Ph.D in CSI (graduated in December 2017), Jeff Snider, Ph.D. in Math (graduated in August 2020), John Leung Ph.D. in CSI (graduated in May 2021), Jarrod Grewe, Ph.D. in CSI (graduated in December 2022), Mayowa Aregbesola Ph.D. in CSI (graduated in December 2022), Joseph Marr Ph.D. in CSI (graduated in December 2022).

Former Masters Students advised: Jonathan Perkins (2011), Fabio Quijada (2013)

Former undergraduate mentoring: Anna-Rose Wolf (URCM), Dan Weingarten (URCM, 2013), Kyle Shaw (URCM), 2013, Byong Kwon (URCM, 2010-2012), Robert Hill (URCM, 2010-2011), Jason Pina (URCM, 2011-2012), Emily Forney (REU, 2010), Sandra Varela (REU 2010), Emiline Pelletier (REU 2014), Sam Jugus (EXTREEMS, 2016), Orton Babb (EXTREEMS, 2017), Ruslan Gabidouline (EXTREEMS, 2018).