THEODORE B. TRAFALIS

Professor, School of Industrial and Systems Engineering
The University of Oklahoma

Director, Optimization & Intelligent Systems Laboratory
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WORK ADDRESS

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PERSONAL DATA: Date of Birth: September 17, 1959
Married to Irini
Two children, Vassilios and Ioanna

PROFESSIONAL INTERESTS

Operations Research/Management Science: mathematical programming, interior point methods, multiobjective optimization, control theory, computational and algebraic geometry, artificial neural networks and intelligent systems, evolutionary programming and global optimization, large scale optimization, financial optimization, support vector machines, data mining, machine learning, bioinformatics, weather prediction, energy markets and risk management, complex systems.

EDUCATION

Ph.D. (1989)   Industrial Engineering, Purdue University, West Lafayette, IN 47907
Dissertation - Efficient Faces of a Polytope: Interior Methods in Multiple
Objective Optimization. Advisor: Professor Thomas L. Morin
M.S.I.E. (1987) Industrial Engineering, Purdue University, West Lafayette, IN 47907.
M.S. (1984)   Mathematics, Purdue University, West Lafayette, IN 47906.
B.S. (1982)   Mathematics, University of Athens, Athens, Greece. Graduated first in
The School of Physical and Mathematical Sciences.

PROFESSIONAL EXPERIENCE

- Professor, School of Industrial Engineering, The University of Oklahoma, (July 2002-present).
- Adjunct Professor of Meteorology, School of Meteorology, The University of Oklahoma.
- Visiting Researcher, Laboratory of Algorithms and Technologies for Network Analysis, National Research University Higher School of Economics, Nizhny Novgorod, Russia, (November 3-December 3, 2014, and May 12-June 12, 2015).
- Visiting Professor, Unitec Institute of Technology, Auckland , New Zealand, March, 2014
- Visiting Professor, School of Computer and Electrical Engineering, National Technical University of Athens, Greece, (January 2014-December 31, 2014, sabbatical).
- Invited Professor, Institut de Mathematiques de Toulouse, Toulouse, France (Summer Semester 2011).
- Visiting Senior Researcher, Institute of Informatics and Telecommunications, National Center for Scientific Research "Demokritos", Athens, Greece, sabbatical (September 2006-August 2007).
- Associate Professor, School of Industrial Engineering, the University of Oklahoma, (August 1997-July 2002).

TRAFALIS, THEODORE B.

- Invited Research Fellow (fully funded), Management and Systems Science, Akita Prefectural University, Honjo, Japan (June 17, 2001- July 18, 2001).
- Visiting Associate Professor, Technical University of Crete, Department of Production Engineering and Management, Chania, Greece (Spring and Summer Semester 1998).
- Visiting Associate Professor, CUST, Universite' Blaise Pascal, Clermont-Ferrand, France (April 20, 1998 - May 20, 1998, September 21, 1998 - October 20, 1998).
- Invited Research Fellow (fully funded), Faculty & Technical Mathematics and Informatics, Delft University of Technology, Delft, The Netherlands (May 28, 1996 -July 28, 1996).
- Assistant Professor, School of Industrial Engineering, the University of Oklahoma (January 1991 - August 1997).
- Visiting Assistant Professor, School of Industrial Engineering, Purdue University (August 1989 - May 1990).
- Instructor, Department of Mathematics, Purdue University (June 1984 - May 1989).
- Teaching Assistant, School of Industrial Engineering, Purdue University (June 1988 - August 1988).
- Teaching Assistant, Department of Mathematics, Purdue University (August 1982 - August 1988).

Courses Taught
Theoretical Foundations of Optimization, Linear Programming, Nonlinear Programming, Engineering Economics, Calculus, Algebra and Geometry, Advanced Calculus, Operations Research, Simulation of Industrial Systems, Multiobjective Optimization, Interior Point Methods, Engineering Optimization, Integer Programming, Optimization Neural Networks, Optimization and Data Mining, Support Vector Machines and Kernel Methods.

FOREIGN LANGUAGES
Knowledge & fluent Greek, good reading knowledge of French and German

ACADEMIC AWARDS
- Presidential International Fellowship, The University of Oklahoma, June-July, 2011.
- ANNIE2010, Best Paper Award: Theoretical Development in Computational Development.
- ANNIE2010, Best Paper Award: Novel Smart Engineering System Design.
- Best Main Track Paper Award, International Conference on Computational Science, ICCS2006, Reading, UK, May 2006.
- Regents Award for Superior Accomplishment in Research and Creative Activity, University of Oklahoma, April 2004.
- Best Paper Award, Theoretical Developments in Computational Intelligence, ANNIE 2003, International Conference on Artificial Neural Networks in Engineering, St. Louis, MO 2003.
- Best Paper Award, Novel Smart Engineering System Design, ANNIE 2002, International Conference on Artificial Neural Networks in Engineering, Saint Louis, MO, 2002.
- First Runner-up Paper Award, ANNIE 2000, International Conference on Artificial Neural Networks in Engineering, Saint Louis, MO, 2000.
- Nominated for best paper award, ANNIE'95, International Conference in Artificial Neural Networks in Engineering, Saint Louis, MO, 1995.
- Kerr McGee Distinguished Lectureship, University of Oklahoma, 1995.
- Obermann Faculty Fellowship, University of Iowa Center for Advanced Studies, 1994.
- David Ross Fellowship, Purdue Research Foundation, June 1988 - Aug 1988 and June1989 - Aug 1989.
- Summer Fellowship, Department of Mathematics, Purdue University, June 1982 - Aug 1982.
- Scholarships for Academic Excellence, University of Athens, Greece, 1978-1982.

MAJOR INVITED SPEECHES AND SESSIONS
International

- Trafalis, T. and A.M. Malyscheff, "Kernel Methods in Natural Gas Storage Valuation", NET 2015, May 18-20, 2015, Nizhny, Novgorod, Russia.
- Trafalis, T., "Kernel Methods and Applications", National Technical University of Athens, School of ECE, Athens, Greece. (December 2014). Lecture, Seminar.
- Trafalis, T., "The Workshop/School on "Clustering and Search Techniques in Large Scale Networks", "Robust Multi-Kernel Classification of Uncertain and Imbalanced Data", RSF, Nizhny Novgorod, Russia. (November 2014). Lecture, Workshop.
- Trafalis, T., The p-Center Machine and Applications," Higher School of Economics, Nizhny Novgorod, Russia. (November 2014). Lecture.
- Trafalis, T., The Workshop/School on "Clustering and Search Techniques in Large Scale Networks", "Bayesian Kernel Methods for Binary Classification and Online Learning Problems," Russian Science Foundation, Nizhny Novgorod, Russia. (November 2014). Lecture, Workshop.
- Trafalis, T., "Optimization and intelligent systems in Management of Water Resources", Atiner, Athens, Greece, Sardinia, Greece. (July 2014).
- Trafalis, T., "Partnership for Research in Data Mining PRDM / PARADIGM and New Directions of Research", Khalifa University School of Engineering, Abu Dabhi, Arabic United Emirates, (June 2014), Invited Lecture, Seminar.
- Invited Tutorial presentation on imbalanced data and applications, INNS Conference on Big Data, August 8-10, San Francisco , 2015
- Invited Tutorial presentation, International Workshop on Machine Learning, Optimization and Big Data, July 20-24, Taormina, Sicily, Italy, 2015
- Invited Speaker, The 5th International Conference on Network Analysis, May 18-20, Nizhny Novgorod, Russia, 2015
- Invited Speaker, Summer School on Operational Research and Applications, May 12–16, Nizhny Novgorod, Russia, 2014.
- Invited Speaker, The Workshop/School on "Clustering and Search techniques in large scale networks", Nizhny Novgorod, Russia, November 4– 7, 2014
- Lectures: "Learning with Kernel Methods and Applications", Summer School on Operational Research and Applications, May 13–18, Nizhny Novgorod, Russia, 2014.
- Invited Plenary Speaker, *The 4th International Conference on Network Analysis*, title of talk: "Kernel Methods with Imbalanced Data and Applications to Weather Prediction", Nizhny Novgorod, Russia, May 11 – 13, 2014.
- Invited Plenary Speaker, *WSEAS CSCC Multiconference on Computers*, Corfu Island, Greece, July 15-17, 2011.
- Invited keynote speaker, *ANNIE 2010*, Saint Louis, MO, Nov., 2010.
- Invited talk, "Kernel Methods for Imbalanced Data in the Health Sciences", *International Conference on Systems Analysis Tools for Better Health Care Delivery: A New Engineering/Health Care Partnership*, Gainesville, FL, USA, March 24-26, 2010.
- Invited speaker, EURO 2009, "Kernel Methods for Imbalanced Data", in the session "Data Mining and Life Sciences", Bonn, Germany, July 5-8, 2009.
- Invited keynote speaker, *Sensors 2008: Theory, Algorithms and Applications, Research and Engineering Education Facility*, University of Florida, Shalimar, FL, April 24-26, 2008.

TRAFALIS, THEODORE B.

- Invited plenary speaker, *10th WSEAS International Conference on Systems*, Athens, Greece, July 10-12, 2006.
- Invited keynote speaker, *ANNIE 2005*, Saint Louis, MO, Nov. 6-9, 2005.
- Invited plenary speaker, *MML 2004 Mathematical Methods for Learning Conference*, Como, Italy, June 21-24, 2004.
- Invited Speaker, Workshop on "Challenges of Continuous Optimization in Theory and Applications," Rhodes, Greece, July 2-3, 2004.
- Invited Session Chair, *Architectures IV,* ANNIE2003, Saint Louis, Missouri, November, 2-5, 2003.
- Invited speaker, Summer School in Learning, *Demokritos, Institute of Informatics and Telecommunications*, Athens, Greece, July 16, 2003.
- Invited Session Chair, "Kernel Methods and Data Mining", EURO/INFORMS Joint International Meeting, Istanbul, Turkey, July 6-10, 2003.
- Tutorial Presentation, "Support Vector machines", 30th International Conference on Computers and Industrial Engineering, Tinos Island, Greece, June 29-July 2, 2002.
- Tutorial Presentation, "Primal-Dual Optimization Methods in Neural Networks and SVMs Training", ACAI'99, Chania, Crete, Greece, July 1999.
- Tutorial Presentation, "Interior Point Optimization Methods in Support Vector Machines Training", ANNIE'99, St. Louis, Missouri, November 1999.
- Invited Speaker, EURO XVI, 16th European Conference on Operational Research, Brussels, Belgium, July 12-15, 1998.
- Invited Speaker and Session Chair, "Optimization in Artificial Neural Network Training", APMOD'98, Limassol, Cyprus, March 11-13, 1998.
- Invited Speaker, 1998 Spring INFORMS/CORS meeting, Montreal, Canada, April, 1998.
- Invited Session Chair, "Interior Point Methods in Global Optimization and Applications", International Symposium on Mathematical Programming, Lausanne, Switzerland, August 1997.
- Invited Speaker, INFORMS/EURO Joint International Meeting, OR/MS in the New Millennium, Barcelona, Spain, July 14-17, 1997.
- Invited Speaker, IFORS, Vancouver, BC, July 1996.
- Invited Speaker, International TIMS meeting, Singapore, June 1995.
- Invited Speaker, APMOD'95, London, UK (April 1995).
- Invited Session Chair, "New Approaches in MOLP", International TIMS XXXII,Anchorage, Alaska, June 1994.
- Invited Talk, XIV Systems Engineering Meeting, Santiago, Chile, July 8-12, 1991.
- Invited Session Chair, "Interior Point Methods," International TIMS Meeting, Rio de Janeiro, Brazil, July 1991.

National
- Invited Session Chair for Analytics and Energy session, 2014 INFORMS meeting, San Francisco, CA, November 9-12, 2014.
- Invited Session Chair for Data Mining sponsored session, 2013 INFORMS meeting, Minneapolis, MN, Oct. 14-17, 2013.
- Invited Session Chair for Data Mining sponsored session, 2012 INFORMS meeting, Phoenix, AZ, Oct. 14-17, 2012.
- Invited Session Chair for 2 sessions, 2001 INFORMS meeting, Miami, FL, November 2001.
- Invited Session Chair for 2000 INFORMS meeting, Salt Lake City, Utah, May 2000.
- Invited Speaker for INFORMS Computer Science Technical Section Conference, Monterey, CA, January 1998.

TRAFALIS, THEODORE B.

- Invited Session Chair for 1997 Fall INFORMS meeting, "Expert Systems, AI, and OR in Project Management Decision Analysis", cluster, Dallas, Texas, October, 1997.
- Invited Session Chair for INFORMS meeting, Neural Networks session, San Diego, CA, May 1997.
- Invited Session Chair for INFORMS meeting, Global Optimization session, San Diego, CA, May 1997.
- Invited Session Chair for INFORMS meeting, Atlanta, GA, November 1996.
- Invited Session Chair for INFORMS meeting, Washington, DC, May 1996.
- Invited Session Chair for INFORMS meeting, New Orleans, LA, October 1995.

HONOR SOCIETY MEMBERSHIPS
Operations Research Honor Society (Omega Rho).
Honorary Member – WISAS (Wide International Scientific and Academic Society)

LISTED IN
- Who's Who in Finance and Business, 2006-2007
- Who's Who in American Education, invited, 2007
- Who's Who in the 21st Century (nominated).
- Who's Who in Science and Engineering, 2006-2007.
- Who's Who in the World, 11th Edition, 1993/94.
- Bibliographic Database for Interior Point Methods, Netlib Library, 1993.

DEPARTMENT, COLLEGE & UNIVERSITY SERVICES
- Committee Member/chair, Deans Advisory Promotion and Tenure Committee, 2010-2013, F '15
- Committee Member, Faculty Search Committee, December 2012-May 2013
- Academic Appeal Panel of the College of Engineering, 2010
- Engineering Library Committee Member, 2010-2013
- Member of Committee, OU Exchange Student Program in Arezzo, Italy, College of Engineering
- Member of IE Graduate Admissions Committee, 2011-2012
- Member of IE technical area committee in Optimization/OR
- Member of IE Graduate/Undergraduate Committee
- Chair of Academic Appeal Panel of the College of Engineering, 2010-2011
- Engineering Library Committee Member, 2010-2011
- Member and Chair of Promotion Committee, College of Engineering, 2010-2011
- Representative of the Graduate Council at the Faculty Senate, 2010
- Member of Graduate Council, 2010
- Member of IE Graduate Admissions Committee, 2010-2011
- Member of IE technical area committee in Optimization/Simulation
- Representative of the Graduate Council in the Faculty Senate, '07-'08, '08-'09.
- Member of Graduate Council, '07-'08, '08-'09.
- Chair of Academic Appeal Panel of the College of Engineering, '08-'09.
- Member of IE Graduate Admissions Committee, '07-'08, '08-'09.
- Member of IE technical area committee – Optimization/Simulation, '07-'08, '08-'09.
- Engineering Library Committee Member, '99-'08, '09.
- IE Graduate Committee, University of Oklahoma ('93, '02, '03, '07, '08, '09).
- Member, Search Committee for Manufacturing Position, School of IE, '05-'06.
- Chairman, Search Committee for Intelligent Systems Position, School of IE, '04-'05.
- Parking Task force Committee Member, College of Engineering, '04-'05.
- Academic Appeal Panel of the Graduate College, University of Oklahoma ('93-'94, '96-'97, '99-'00, '02-'03).
- IE/OR Committee, University of Oklahoma ('91-present), chair of OR Committee ('99-'06).

TRAFALIS, THEODORE B.

- IE Undergraduate Committee, University of Oklahoma ('93-'97, '02, '08-09).
- Faculty Senate Member, '99-'01.
- Founding member, Center for Engineering Optimization, University of Oklahoma ('97).
- Committee for Best Dissertation Award in Engineering and Physical Sciences, University of Oklahoma ('96).
- Arranged talks for three internationally recognized speakers in the area of optimization (Fall'92-Dr. Wallenius, Helsinki School of Economics, Helsinki, Finland; Fall' 94-Dr. Pardalos, Co-director of Center of Applied Optimization, University of Florida, Gainesville, FL; Fall '96-Dr. Terlaky, Delft University of Technology, Delft, The Netherlands).
- Offered compressed video class (IE 5643) both at OU and OSU ('95), and OU in Tulsa, Sp'15.
- Member, Advisory Board, Center of Information Technology and Computing, University of Oklahoma ('95).
- Member, School of Industrial Engineering, Director Search Committee, University of Oklahoma ('92,'93).
- Marshall, Graduation Ceremonies, University of Oklahoma ('93).
- Faculty advisor, Hellenic Student Association, Purdue University ('90).
- President, Hellenic Student Association, Purdue University ('87-'89).
- Graduate and undergraduate advising ('91 - present).

INTERDISCIPLINARY ACTIVITIES
- Worked as a PI for an NSF multi-university center proposal, worked on one NSF research proposal jointly with faculty from the School of Meteorology and another NSF proposal.
- PI for an interdisciplinary NSF research project with faculty and students from Electrical Engineering, Physics, Computer Science, Meteorology, Industrial Engineering and the National Severe Storms Laboratory.
- Have worked as PI on two major research centers proposals with faculty from several universities, schools and departments both national and international.
- Have been very aggressive in working with faculty in other departments on interdisciplinary research.
- Have worked on joint proposals with faculty from Computer Science, Mechanical Engineering, Chemical Engineering and Meteorology.
- Have served on numerous Ph.D. and M.S. committees in Mechanical Engineering, Civil Engineering, Electrical Engineering, Computer Science, and Chemical Engineering.

PROFESSIONAL ACTIVITIES
Journals and Editorial Boards
- Co-editor, Procedia Computer Science Volume 53, Pages 1-486, INNS Conference on Big Data 2015 Program, San Francisco, CA, USA 8-10 August 2015.
- Technical Committee member, Fifth International Conference on Industrial Engineering and Operations Management (IEOM), Hyatt Regency, Dubai, UAE, March 3 – 5, 2015.
- Guest coeditor, Special Issue on Big Data Analytics for Cyber-Security Intelligence, Computational Intelligence Journal, forthcoming, 2016.
- Associate Editor, WSEAS Transactions on Computers
- Editor, *Athens Journal of Technology & Engineering,* since March 2014
- Editor-in-Chief, *Journal of Intelligent Control and Automation*, on line journal, 2011-present.
- Associate Editor, *Computational Management Science*, Springer.
- Associate Editor, *Journal of Heuristics*, Springer.
- Guest editor for the journal *Annals of Operations Research*, special issue in DATA MINING AND INFORMATICS, Volume 216, number 1, 2014.

TRAFALIS, THEODORE B.

- Editorial board of *Journal of Intelligent Learning Systems and Applications*, on line journal.
- Editorial board for the book " Information Systems for Global Financial Markets: Emerging Developments and Effects", ed. Alex Yap, IGI Global.
- Editorial board of the *Journal Circuits and Computers*, on line journal.
- Editorial board, *Journal of Applied Mathematics*, on line journal launched by Scientific Research Publishing, USA.
- Editorial board of the *Journal of Technology and Investment*.
- Guest Editor, Special Issue on *Optimization in Learning from Data, Journal of Computational Management Science*, 2008, 2009.
- Guest Editor, Special Issue on *Support Vector Machines*, *Journal of Computational Management Science*, 2006.

PROFESSIONAL ACTIVITIES
International Conference Committees and Advisory Boards

- Coordinator of a panel in discussions for a new book in the Greek Financial Crisis, Atiner (Athens Institute of Education and Research), Athens, Greece, June 2014.
- Co-Chair PC committee, INNS-BigData'2015 conference, 8-10 August 2015, San Francisco, CA, USA
- Conference Chair, *3d Annual International Conference on Industrial, Systems and Design Engineering,* 23-26 June 2015, Athens, Greece
- Conference Chair, *2nd Annual International Conference on Industrial, Systems and Design Engineering,* 23-26 June 2014, Athens, Greece
- Invited Committee member, the 5th International Conference on Information, Intelligence, Systems and Applications, July 7-9, Chania, Crete, Greece, 2014.
- Invited International Program Committee of International Conference on Knowledge Management and Information Sharing, KMIS 2014, 2015.
- Invited Session Chair, INFORMS 2013, Minneapolis, MN, October 2013.
- Stream Organizer, *Joint EURO/INFORMS Conference*, Rome, July 2013, (August 2012-2013).
- Conference Chair, *1st International Conference in Industrial and Systems and Design Engineering*, June 2013, Athens Greece.
- Invited Session Chair, INFORMS 2012, Phoenix, AZ, February 2012.
- Committee Member, Organizing Committee, "International Conference on Biodiversity and Sustainable Energy Development", (Biodiversity-2012), September 14-15, 2012, *Hyderabad International Convention Center*, India, 2012.
- Invited International Program Committee of International Conference on Knowledge Management and Information Sharing, KMIS 2012, Barcelona, Spain, 4-7 October, 2012.
- Committee Chair, American Conference on Applied Mathematics, Cambridge, MA, 25-29 January, 2012.
- Invited Stream organizer, EURO 2012, Vilnius, Lithuania, July 2012.
- Invited Member, International Program Committee of International Conference on Knowledge Management and Information Sharing, KMIS 2011.
- Invited Member Program Committee of ICMSBE 2011, April 2011, Jeju Island, South Korea.
- Invited Member Program Committee of Eurographics Workshop on 3D Object Retrieval, April 10, 2011, Llandudno (UK).
- Invited Member Program Committee of ACM3DOR 2010, 25-29 October 2010, Firenze, Italy.
- Invited Stream organizer, EURO 2010, Lisbon, Portugal, July, 2010.
- Invited International Committee Member, Eurographics 2010.
- Organizing Committee Member, International Conference on Artificial Neural Networks, ANNIE'10, St. Louis, MO, November 2010.

TRAFALIS, THEODORE B.

- Invited Program Committee, The International Conference on Industrial Engineering and Service Science, IESS 2011, Surakarta, Indonesia, 20-23 September 2011.
- Member Scientific Committee, 2nd EURO-SIAM Conference, December 29-31, 2011 in Montreux, Switzerland.
- Member Organizing Committee, 5th International Conference on Energy & Development, Environment & Biomedicine (EDEB'11) Corfu Island, Greece, July 14-16, 2011.
- Invited Member of Technical Committee of *The 10th International Multi-Conference on Systems, Signals and Devices (SSD'10),* Amman, Jordan, 2010.
- Organizing Committee Member, *International Conference on Artificial Neural Networks, ANNIE'08,* St. Louis, MO, November, 2009.
- Invited Co-Chair of "The 4th INFORMS Workshop on Data Mining and System Informatics," October 10, 2009, San Diego, CA, USA.
- Invited Member, International Program Committee of *The International Conference on Knowledge Management and Information Sharing*, KMIS 2009, Madeira, 5-8 October, 2009, Portugal.
- Program Committee Member, "Workshop on Knowledge Discovery and Cognitive Models for Data Analysis, EPIA 2009," *The Fourteenth Portuguese Conference on Artificial Intelligence*, Aveiro, Portugal, October 2009.
- Stream organizer, *EURO 2009*, "Optimization and Data Mining", Bonn, Germany, July 5-8, 2009.
- International Committee Member, *Eurographics 2009*, the 30th Annual Conference of the European Association for Computer Graphics, March 30 - April 3, Munich, Germany, 2009.
- Organizing Committee Member, *International Conference on Artificial Neural Networks, ANNIE'09*, St. Louis, MO, November 2009.
- International Committee Member, *Eurographics 2008 Workshop on 3D Object Retrieval*, Crete, GREECE, April 15, 2008.
- Scientific Committee, *The American Computing Conference 2008*, MIT, Cambridge, USA, April 21-23, 2008.
- Organizing Committee Member, *International Conference on Artificial Neural Networks, ANNIE'08,*St. Louis, MO, November, 2008.
- Invited participant, joint meeting of *NSF* and *Chinese Academy of Sciences*, Beijing, May 30, 2007.
- Invited cluster chair for the *Artificial Intelligence Section of INFORMS*, Puerto Rico *International 2007* Rio Grande, Puerto Rico, July 8 - 11, 2007.
- Stream organizer, *EURO 2007*, Reykjavic, Iceland, July 2-5, 2007.
- Scientific Committee, *4th International Conference for Sciences of Electronic, Technologies of Information and Telecommunications (SETIT)*, Susa, Tunisia, March 18-22, 2007.
- Co-Organizer, *International Conference on the Dynamics of Disasters*, Athens, Greece, October, 2006.
- Stream organizer, *EURO 2006*, Reykjavic, Iceland, July 2-5, 2006.
- Committee for Theoretical Developments, Best Paper Award, *ANNIE'05*, St. Louis, MO, November, 2005.
- Session Chair for *ANNIE'05*, St. Louis, MO, November, 2005.
- Session Chair for *WSEAS International Conference – CIMMACS'05*, Miami, Florida, USA, November 17-19, 2005.
- Scientific Committee, *5th WSEAS International Conference on Systems Theory and Scientific Computation*, Malta, September 15-17, 2005.
- Session Chair for *IJCNN'05*, Montreal, Quebec, Canada, July 31-Aug. 1, 2005.
- Invited Review Committee Member, *IJCNN'05*, Montreal, Quebec, Canada, July 31 – Aug. 1, 2005.
- Session Chair for WSEAS CSCC 2005 conference, July 12-17, Athens, Greece, 2005.

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- Session Chair for WSEAS Multi-conference in Neural Networks, Fuzzy Systems, Evolutionary Computing 2005, Lisbon, Portugal, June 16-18, 2005.
- Scientific Committee, 3rd International Conference for **S**ciences of **E**lectronic, **T**echnologies of **I**nformation and **T**elecommunications (**SETIT**), Susa, Tunisia, March 27-31 2005.
- Advisory Board, Int'l Conference on Computational Management Science, 2005, University of Florida, Gainesville, FL, March 31-April 3, 2005.
- Advisory Board, Committee Member, Conference on "Data Mining in Biomedicine", University of Florida, Gainesville, FL., February 2-4, 2005.
- Invited Review Committee Member, *International Joint Conference on Neural Networks* (*IJCNN2004*), Budapest, Hungary, July 25-29, 2004.
- Session Chair, EUROXX Conference, Rhodes, Greece July 4-7, 2004.
  Scientific Committee Member, "MML 2004 Mathematical Methods for Learning," Como, Italy, June 21-24, 2004.
- Advisory Board Committee Member, Conference on "Data Mining in Biomedicine", University of Florida, Gainesville, FL, February 16-18, 2004.
- Scientific Committee Member, EURO Summer Institute in "Optimization and Data Mining", Middle East Technical University, Ankara, Turkey, July 9-25, 2004.
- Scientific Committee Member, *"Workshop on Challenges of Continuous Optimization in Theory and Applications",* Rhodos,Grece, July 2-3, 2004.
- Review Committee Member, International Joint Conference on Neural Networks, IJCNN 2003, Portland, Oregon, July 20-24, 2003.
- Invited Organizing Committee Member, 2003 International Conference on Artificial Neural Networks, ANNIE 2003, Saint Louis, MO, November, 2003.
- Invited Organizing Committee Member, 2002 International Conference on Artificial Neural Networks, ANNIE 2002, Saint Louis, MO, November, 2002.
- Invited Organizing Committee Member, 2002 IEEE World Congress on Computational Intelligence, Honolulu, Hawaii, May 2002.
- Founding Member, Continuous Optimization Working Group of EURO, July 2000.
- Organizing Committee Member, International Conference on Artificial Neural Networks, ANNIE 2001, St. Louis, MO, November 2001.
- Organizing Committee Member, International Conference on Artificial Neural Networks, ANNIE 2000, St. Louis, MO, November 2000.
- Organizing Committee Member, International Conference on Artificial Neural Networks, ANNIE '99, St. Louis, MO, November '99.
- Committee for the area "Supervised and Unsupervised Learning", International Conference on Neural Networks, ICCN'97, Houston, TX, June '97.
- Invited delegate, Research and Management Science Leaders People to People Program to Warsaw, Prague, Budapest, May 17-30, 1997.
- Session chair for the International Conference on Artificial Neural Networks in Engineering, ANNIE'96, St. Louis, MO, November '96.
- Invited panel member for the best paper award for the International Conference on Artificial Neural Networks in Engineering, ANNIE'96, St. Louis, MO, November '96.
- Invited delegate, Delegation of Engineers and Engineering Educators to South Africa, June 16-19, '96.
- Member of Exhibits Committee for International Conference on Neural Networks (ICNN'96), Washington, DC, June 3-6, '96.

Referee
- Referee: *Computational Management Science,* June 2-12 – December 2012.

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- Referee: *Computational Management Science*, *IEEE Transactions on Neural Networks*, *Computers & Industrial Engineering*, *International Conference on Knowledge Managements and Information Sharing 2009*, *Optimization Methods and Software*, *Naval Research Logistics*, *Handbook of Industrial Engineering*, *Mathematical Programming*, *Management Science*, *European Journal of Operations Research*, *Multicriteria Decision Analysis*, *Operations Research*, *J. Assoc. Comput. Mach. (J. ACM)*, *Computers and Operations Research*, *Optimization Theory and Applications*, *IEEE Transactions on SMG*, *IEEE Transactions on Cybernetics*, *IEEE Transactions of Neural Networks*, *Optimization in Engineering*, *International Journal of Smart Engineering System Design*, *Global Optimization*, *IEEE Transactions on Circuits and Systems II*, *Journal of Manufacturing Science and Engineering*, *Journal of Computing & Information Science*, *ASME Transactions*, *IJPR*, *Control and Intelligent Systems*, *C&OR*, *Information Sciences*, *Computational Statistics and Data Analysis*, *Weather and Forecasting*, *IASTED*, *Systems*, *Man and Cybernetics-Part B*, Proceedings of a lot of International Conferences, *Computational Statistics and Data Analysis*, *IJCNN 2009*, *Eurographics 2008 and 2009*, *International Conference on Knowledge Management and Information Sharing 2010*,*Optimization Methods and Software, European Journal of OR*, *Eurographics Workshop on 3D Object Retrieval, International Multi-Conference on Systems, Signals and Devices (SSD'10) Amman, Jordan, 2010.*
  INNS Big Data Conference, Optimization Letters.
  Reviewer: National Science Foundation, '92-present, NSF panelist; research proposals, KUIRF, level 2 research proposals, Khalifa University, Abu Dabhi. (May 2014 – June 2014, August 2015).

PROFESSIONAL ACTIVITIES
International
- Reviewer: faculty promotion, external reviewer, New Zealand (11/2014 – 12/2014).
- Reviewer: faculty promotion, Apella, Greece (1/2014 – 12/2014).

National
- Invited Session Chair for Analytics and Energy session, 2014 INFORMS meeting, San Francisco, CA, November 9-12, 2014.
- Invited Session Chair, Data Mining Cluster, *INFORMS 2013,* Minneapolis, MN.
- Chaired session at ORSA/TIMS meeting, Boston, MA, April '94.
- Chaired session at ORSA/TIMS meeting, Chicago, IL, May '93.
- Chaired session at ORSA/TIMS meeting, San Francisco, CA, November '92.
- Chaired session at ORSA/TIMS national meeting, Orlando, FL, April '92.

PROFESSIONAL ORGANIZATIONS
Institute for Operations Research and Management Science, Society of Industrial and Applied Mathematics, International Society on Multiple Criteria Decision-Making, Senior member of International Society of Neural Networks, EURO Working Group on Financial Modeling, EUROPT.

BOOKS
2. Trafalis, Theodore B., *Robust Optimization and Learning:Theory and Applications*, Springer Academic Publishers, **in preparation**
1. *Research Monograph* with P. Pardalos and P. Xanthopoulos, "Robust Data Mining", Springer, 2013.

REFEREED JOURNAL ARTICLES PUBLISHED AND IN PRESS
68. Emre Tokgöz and Theodore B. Trafalis, "2-Facility Manifold Location Routing Problem", *Optimization Letters*, accepted, DOI: DOI 10.1007/s11590-015-0984-2, published on line, December 2015.

67. Emre Tokgöz ,Samir Alwazzi and Theodore B. Trafalis, A heuristic algorithm to solve the single-facility location routing problem on Riemannian surfaces, *Computational Management Science,* 12, issue 3, pg. 397-415, 2015.

66. Richman, M. B., L. M. Leslie, T.B. Trafalis, and H. Mansouri, "Data selection using support vector regression". *Adv. Atmos. Sci.*, **32**(3), 277 - 286, doi: 10.1007/s00376-014-4072, 2015.

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(h)   *Proceedings of the International Conference on Neural Networks*, WCNN93, Erlbaum, **III**:359, 1993, paper presented by Paul J. Werbos, Director NSF, Neuroengineering Program referring to open questions and research related to supervised learning.

CONFERENCE PRESENTATIONS AND INVITED TALKS

TRAFALIS, THEODORE B.

International

142. Trafalis, T. B., B. Santosa, M. B. Richman, "Tornado Detection with Kernel-Based Classifiers from WSR-88D Radar Data", *2nd International Conference on Dynamics of Disasters*, June 29-July 2, 2015, Kalamata, Greece.

141. Tokgöz, Emre, Iddrisu Awudu and Theodore B. Trafalis, "A Single-Facility Manifold Location Routing Problem with an Application to Supply Chain Management and Robotics", *International Workshop on Machine Learning, Optimization and Big Data*, July 20-24, 2015, Taormina, Sicily, Italy.

140. Rezapour, S., Allen, J., Trafalis, T., Mistree, F., "Robust Supply Chain Network Design by Considering Demand-side Uncertainty and Supply-side Disruption." *ASME International Design Engineering Technical Conferences*, August 4- 7, 2013.

139. Zhang, Z., Trafalis, T. , *Time-series Analysis for Detecting Structure Changes and Suspicious Accounting Activities in Public Software Companies*, Complex Adaptive Systems Conference, Baltimore, MD, November 2013 .

138. Trafalis, T. (Presenter), Indra Adrianto, I., Richman, M. , EURO/INFORMS 2013, "Machine-learning classifiers for imbalanced tornado data", Rome, Italy, July 2013.

137. Trafalis, Theodore T., (Presenter and Author) and N. Couellan, *EURO 2012, 25th European Conference on Operational Research,* "An Adaptive Weighted Kernel Technique for Online Training with Imbalanced Data," EURO, Vilnius, Lithuania. July 2012. Paper, Conference.

136. Trafalis, T. (Presenter and Author) and R. Pant, *6th Annual International Conference on Mathematics, Statistics and Education,* 11-14 June 2012, "SVM Classificaiton of Imbalanced and Uncertian Data Using Robust Milti-Kernel Classification," Athens Institue for Education and Research (ATINER), Athens,Greece. (June 2012). Paper, Confereence.

135. Trafalis, Theodore B., "New Developments of Kernel Methods in Weather Prediction and Applications", Plenary talk, *WSEAS CSCC MultiConference on Computers*, Corfu Island, Greece, July 15-17, 2011.

134. Trafalis, Theodore B., Raghav Pant, and Kash Barker, "Support Vector Machine Classification of Uncertain and Imbalanced data using Robust Optimization", *WSEAS CSCC MultiConference on Computers*, Corfu Island, Greece, July 15-17, 2011.

133. Trafalis, Theodore B. and Emre Tokgöz, "Mixed Convexity & Optimization of the SVM QP Problem for Nonlinear Polynomial Kernel Maps", *WSEAS CSCC MultiConference on Computers*, Corfu Island, Greece, July 15-17, 2011.

132. Dawotola, Alex.W., T.B. Trafalis, Z. Mustaffa, P.H.A.J.M van Gelder, and J.K Vrijling, "Quantitative Risk Analysis of Fuel Spills due to Corrosion", In *Proc., ESREL 2011*, Troyes, France, 2011.

131. Dawotola, Alex.W., T.B. Trafalis, Z. Mustaffa, P.H.A.J.M van Gelder, and J.K Vrijling, "Data-Driven Risk Based Maintenance Optimization of petroleum pipelines subject to corrosion", In *Proc., ISOPE 2011*, Hawaii, USA, 2011.

130. Couellan, N. and T. B.Trafalis, "An Incremental Interior Point Method for On-line SVM Learning", *15th Austrian-French-German Conference on Optimization (AFG'11)*, Toulouse, Sept.19-23, 2011.

129. Trafalis, T. B. and N. Couellan, "Online SVM learning via an incremental primal-dual technique", *World Congress of Global Optimization (WCGO-2011)*, Chania, Greece, July 3- 7, 2011.

128. Trafalis, T.B. (guest lecturer), "recent Developments of Kernel Methods in Weather Prediction and Applications", Seminar, Institute of Applied Mathematics, Universite de Toulouse, Toulouse, France, June 2011.

127. Hu, Y. and T. B. Trafalis, "Support vector machines applied to natural gas price prediction*"*, *24th Mini EURO Conference on Continuous Optimization and Information-Based Technologies in the Financial Sector (MEC EurOPT 2010)*, June 23–26, 2010, Izmir, Turkey (presenter T. B. Trafalis).

126. Trafalis, T.B., "Kernel Methods for Imbalanced Data," invited speaker, *EURO 2009*, session "Data Mining and Life Sciences," Bonn, Germany, July 5-8, 2009.

125. Maalouf, M. and T.B. Trafalis, "Kernel Logistic Regression using Truncated Newton Method", *Artificial Neural Networks in Engineering (ANNIE'08)*, Saint Louis, MO, November 2008.

124. Adrianto. I, T.B. Trafalis, and M.B. Richman, "Active Learning with Kernel Machines for Tornado Detection", *Artificial Neural Networks in Engineering (ANNIE'08)*, Saint Louis, MO, November 2008**.**

123. Mansouri, H., M.B. Richman, T.B. Trafalis and L.M. Leslie, "A Pipeline Support Vector Regression Method to Thin Large Ocean Surface Wind Data On-line", *Artificial Neural Networks in Engineering (ANNIE'08)*, Saint Louis MO, November 2008.

122. Papadakis, P., I. Pratikakis, T.B. Trafalis, "Relevance Feedback in Content-based 3D Object Retrieval – A Comparative Study", *Computer Aided Design and Applications '08,* Orlando, FL, June 23-27, 2008.

121. Mansouri, H. and Trafalis, T.B., "Reinforcement Learning: An On-Line Framework Using Support Vectors", *2007 International Joint Conference on Neural Networks*, Orlando, FL, August 2007.

120. Malyscheff, A. M. and T. B. Trafalis, "Support Vector Machine Regression in the Energy Forward Markets", *Power Systems Modeling 2007*, Athens, Greece, June 5-8, 2007.

119. Mansouri, H. and T.B. Trafalis (speaker), "On-Line Reinforcement Learning Using Kernels", *Advances in Global Optimization: Methods and Applications*, Myconos, Greece - June 13-17, 2007.

118. Trafalis, T.B.,"Kernel Methods and Applications", invited talk, Koc University, Istanbul, Turkey, April 27, 2007.

117. Mansouri, H., T.B. Trafalis, R.C. Gilbert, L.M. Leslie, M.B. Richman, "Ocean Surface Wind Vector Forecasting Using Support Vector Regression", *2007 Artificial Neural Networks in Engineering (ANNIE) Conference*, Saint Louis, MO, November, 2007.

116. Adrianto, I. and Trafalis, T. B. , "The p-Center based kernel machine for regression and applications", in the *22nd European Conference on Operational Research (EURO XXII)*, Prague, Czech Republic, July 2007.

115. Beardslee, E. and T.B. Trafalis, "Applied data mining and simulation optimization for repair service inventory management decision support", *4th International Conference on Computational Management Science*, Geneva, Switzerland, April 20-22, 2007.

114. Oladunni, O.O. and T.B. Trafalis, "Regularized Knowledge-based Kernel Machine," *ICCS 2007*, Beijing, China, May 2007.

113. Oladunni, O.O. and T.B. Trafalis, "Regularization based Classification Models," *International Joint Conference on Neural Networks Conference (IJCNN'07)*, August 2007.

112. Trafalis, T. B. and R. C. Gilbert, "Quadratic Programming Formulations for Classification and Regression", *Joint EUROPT-OMS Meeting 2007: 2nd Conference on Optimization Methods and Software* and *6th EUROPT Workshop* "Advances in Continuous Optimization", Prague, Czech Republic, 2007.

111. Mansouri, H., R. C. Gilbert, T. B. Trafalis, L. M. Leslie and M. B. Richman, "Ocean Surface Wind Vector Forecasting using Support Vector Regression, *2007 Conference on Artificial Neural Networks In Engineering, ANNIE'07*/, St. Louis, Missouri, USA, 2007.

110. Beardslee, E. A. and T. B. Trafalis, "Discovering Service Inventory Demand Patterns from Archetypal Demand Training Data", *INFORMS* workshop in Artificial Intelligence and Data Mining, Pittsburgh, U.S.A, November 2006.

109. Pittman, J., H. Pham, M. Court, T.B. Trafalis and Chen Ling , " Dynamic Evacuation Modeling", *International Conference on the Dynamics of Disasters 2006*, Mati, Attica, Greece, October 2006.

108. Trafalis, T.B., "Kernel Methods for Weather Prediction", *International Conference on the Dynamics of Disasters 2006*, Mati, Attica, Greece, October, 2006.

TRAFALIS, THEODORE B.

107. Trafalis, T. B. and J. Park, "Uncertainty and Sensitivity Analysis Issues in Support Vector Machines", WSEAS 06, Athens, Greece, July 10-12, 2006. (session chair)

106. Trafalis, T. B., "Linear Programming Kernel Methods and Applications", Workshop on Advances in Continuous Optimization, Reykjavik, Iceland, June 30 – July 1, 2006. (session chair)

105. Trafalis, T. B. and O. O. Oladunni ,"Multi-classification Tikhonov Regularization Knowledge-based Support Vector Machine", *EURO XXI 2006*, Reykjavik, Iceland, July 2006.

104. Trafalis, T. B., "Multiobjective Optimization in Support Vector Machines with Noisy Data", *MCDM Conference*, Chania, Crete, Greece, June 2006 (session chair).

103. Son, -J. and T. B. Trafalis, "Detection of Tornados Using an Incremental Revised Support Vector Machine with Filters," DDDAS Workshop , *ICCS 2006*, Reading College, UK, May 2006.

102. Oladunni, O. O., T. B. Trafalis, and D. V. Papavassiliou, "Knowledge-based Support Vector Machine Applied to Vertical Two-Phase Flow", *ICCS 2006*, Reading College, UK, May 2006.

101. Trafalis, T.B.,"Kernel Methods for Prediction of Complex Systems", *Risk Symposium 2006*. Risk Analysis for Homeland Security and Defense: Theory and Application, The Hilton, Santa Fe, NM, 20-22, March 2006.

100. Santosa, B. and T.B. Trafalis, "Robust Kernel-Based Regression", *The 4th WSEAS International Conference on Computational Intelligence, Man-Machine Systems and Cybernetics (CIMMACS'05)*, November 2005.

99. Alenezi, A., S. Moses, and T.B. Trafalis, "Flowtime Estimation for Complex Production Systems Using Support Vector Regression", *ANNIE 2005*, Saint Louis, MO, November 2005.

98. Trafalis, T.B., M.B. Richman and B. Santosa, "Feature Selection of Radar-Derived Attributes with Linear Programming Support Vector Machines and Branch and Bound Methods", *ANNIE 2005*, Saint Louis, MO, November 2005.

97. Trafalis, T.B., B. Santosa, M.B. Richman, "Feature Selection with Linear Programming Support Vector Machines and Applications to Tornado Prediction", *9th WSEAS International Conference on Computers (ICCOMP'05))*, Athens, Greece, July 14-16, 2005.

96. Oladunni, O. and T.B. Trafalis, "Mixed-Integer Programming for Kernel-Based Classifiers", *The 9th WSEAS International Conference on Computers (ICCOMP'05)*, Athens, Greece, July 14-16, 2005

95. Trafalis T.B. and O. Oladunni, "Pairwise Multi-classification Support Vector Machines: Quadratic Programming (QP-P$_A$MSVM) formulations", *The 6th WSEAS International Conference on Neural Networks (NN'05)*, Lisbon, Portugal, June 16-18, 2005.

94. Oladunni, O. and T.B. Trafalis, "Least Square Multi-classification Support Vector Machines: Pair-wise (P$_A$LS-MSVM) & Piece-wise (P$_I$LS-MSVM) formulations", *The 6th WSEAS International Conference on Neural Networks (NN'05)*, Lisbon, Portugal, June 16-18, 2005.

93. Trafalis, T.B., and R.C. Gilbert, "Maximum Margin Classifiers with Noisy Data: A Robust Optimization Approach, *International Joint Conference on Neural Networks (IJCNN)*, Montreal, Canada, 2005.

92. Trafalis, T.B. and R.C. Gilbert, "Robust Support Vector Machines for Classification and Regression", *EUROMINI 2005 Pecs Conference*, Pecs, Hungary, July 2005.

91. Santosa, B., M.B. Richman, and T.B. Trafalis, "Variable Selection and Prediction of Rainfall from WSR-88D Radar Using Support Vector Regression", *The 6th WSEAS International Conference on Neural Networks (NN'05)*, Lisbon, Portugal, June 16-18, 2005.

90. Trafalis, T.B., B. Santosa and M.B. Richman, "Learning Networks for Tornado Detection: A Bayesian Perspective", *International Conference in Data Mining 2005*, Skiathos, 2005.

89. Beardslee, E.A. and T.B. Trafalis, "Data Mining Methods in a Metrics-Deprived Inventory Transactions Environment", *International Conference in Data Mining 2005*, Skiathos**, 2005.**

88. Son, Hyung-Jin, T.B. Trafalis, and M.B. Richman, "Determination of the Optimal Batch Size in Incremental Approaches: An Application to Tornado Detection", *International Joint Conference on Neural Networks (IJCNN),* Montreal, Canada, 2005.

87. Trafalis, T.B., M. B. Richman and B. Santosa, "Dynamic Data Driven Support Vector Machines Applied To Tornado Detection", *ANNIE04,* Saint Louis, MO, November 2004.

86. Santosa, B. and T. B. Trafalis, "Multiclass Procedure for Minimax Probability Machine", *ANNIE04,* Saint Louis, MO, November 2004**.**

85. Trafalis, T. B. and O. Oladunni, "Single Phase Fluid Flow Classification via Neural Networks & Support Vector Machine", *ANNIE04,* Saint Louis, MO, November 2004.

84. Trafalis, T.B., M. B. Richman and B. Santosa, "Dynamic Data Driven Support Vector Machines Applied To Tornado Detection", *ANNIE04, Saint Louis*, MO, November 2004.

83. Ince, H., Trafalis, T. B., and Kasap, S., "Gamma-Support Vector Machines", *IMS 2004*, *4th International Symposium on Intelligent Manufacturing Systems*, Sakarya-Türkiye, 6-8 September 2004.

82. Ince, H., Trafalis, T. B., and Kasap, S., "An Intelligent System: Support Vector Machines for Portfolio Selection", *IMS 2004*, *4th International Symposium on Intelligent Manufacturing Systems*, Sakarya-Türkiye, 6-8 September 2004.

81. Kasap, S., Trafalis, T. B., and Ince, H., "Applications of Primal Dual Interior Point Methods to Support Vector Machines for Classification", *IMS 2004*, *4th International Symposium on Intelligent Manufacturing Systems*, Sakarya-Türkiye, 6-8 September 2004.

80. Trafalis, T. B. and H. Ince, "Kernel Principal Component Analysis and SVMs for Stock Price Prediction", *IJCNN 2004*, *International Joint Conference in Neural Networks*, Budapest, Hungary, July 2004.

79. Trafalis, T.B, "SVM Classification with Noisy Data: A Second Order Cone Programming Approach", invited talk, *EURO XX Conference,* Rhodes, Greece, July 4-7, 2004**.**

78. Trafalis, T.B, "Optimization and Learning with Kernel Methods", *Workshop on Challenges of Continuous Optimization in Theory and Applications*, Rhodes, Greece, July 2-3, 2004.

77. Trafalis, T. B. and H. Ince, "Kernel Principal Component Analysis and Support Vector Machines for Stock Price Prediction", *EURO XX Conference*, Rhodes, Greece, July 4-7, 2004**.**

76. Trafalis, T.B, "Kernel Methods and Data Mining of Severe Weather Data", invited talk, *Mathematical Methods of Learnin*g, Como, Italy, June 21-24, 2004.

75. Trafalis, T.B., B. Santosa and M.B. Richman, "Rule-based support vector machine classifiers applied to tornado prediction", *Computational Science-ICCS 2004*, Krokaw, Poland, June 2-4, 2004.

74. Trafalis, T.B., B. Santosa and T. Conway, "Knowledge Base-Clustering of Multi-Class SVM for Genes Expression Analysis", conference on *Data Mining in Biomedicine*, University of Florida, Gainesville, FL, February 16-18, 2004.

73. Trafalis, T.B., H. Ince and T. Mishina, "Support Vector Regression in Option Pricing", Workshop in *Soft Computing for Financial Analysis*, CJFER'03, Hong Kong, 2003.

72. Trafalis, T.B., M.B. Richman and B. Santosa, "Tornado Detection with Kernel-Based Methods", *ANNIE* 2003**,** St. Louis, MO.

71. Trafalis, T.B. and S.A. Alwazzi, "Robust Support Vector Regression and Applications", *ANNIE* 2003**,** St. Louis, MO.

70. Ince, H. and T.B. Trafalis, "Short Term Forecasting With Support Vector Machines And Application To Stock Price Prediction", *ANNIE* 2003, St. Louis, MO.

69. T.B. Trafalis and H. Ince, "Tornado Detection with Support Vector Machines", invited paper for *International Conference on Computational Science*, Melbourne, Australia, June 2-4, 2003.

68. H. Ince and T.B. Trafalis, "Support Vector Regression in Option Pricing", invited paper, *EURO/INFORMS Joint International Meeting*, Istanbul, Turkey, July 6-10, 2003.

67. T.B. Trafalis, B. Santosa and M. Richman, "Prediction of Rainfall from WSR-88D Radar Using Kernel Based Regression Methods", invited paper, *EURO/INFORMS Joint International Meeting*, Istanbul, Turkey, July 6-10, 2003.

66. T.B. Trafalis, M.B. Richman and B. Santosa, "Rainfall Estimation from WSR-88D Radar using ANNs and Kernel-Based Methods", *International Conference on Computational Management Science*, Chania, Crete, May 22-30, 2003.

65. Theodore B. Trafalis and S.A. Alwazzi, "Robust Optimization in SVM Training with Bounded Errors", *2003 International Joint Conference on Neural Networks*, Portland, OR, USA, July 20-24, 2003.

64. Trafalis, T.B. and A.M. Malyscheff, "Support Vector Machines and the Electoral College", *2003 International Joint Conference on Neural Networks*, Portland, Oregon, USA, July 20-24, 2003.

63. Trafalis, T.B. and A.M. Malyscheff, "D.C. Programming and Optimal Selection of the Radial-Basis Kernel Parameter", *4th International Conference on Frontiers in Global Optimization*, Santorini, Greece, June 8-12, 2003.

62. Trafalis, T.B., "Robust Optimization Methods in Support Vector Machines", *NATO Advanced Study Institute on Learning Theory and Practice (LTP 2002)*, Leuven, Belgium, July 8-19, 2002.

61. Trafalis, T.B. "Optimization Methods in Support Vector Machine Training and Applications", Tutorial Presentation, *30th International Conference on Computers & Industrial Engineering*, Tinos Island, Aegean Sea, Greece, June 29-July 2, 2002.

60. Trafalis, T.B., H. Ince, and Theodoros Evgeniou, "Hierarchical Methods for Training Support Vector Machines with very large datasets", *30th International Conference on Computers & Industrial Engineering*, Tinos Island, Aegean Sea, Greece, June 29-July 2, 2002.

59. Malyscheff, A.M. and T.B. Trafalis, "An Analytic Center Machine for Regression, *NATO Advanced Study Institute on Learning Theory and Practice (LTP 2002)*, KU Leuven, Leuven, Belgium, July 8-19, 2002.

58. Trafalis, T.B. and H. Ince, "Benders Decomposition Technique for Support Vector Regression", *Proceedings of International Joint Conference on Neural Networks (IJCNN)* IEEE Press, Honolulu, HI, May 12-17, 2002.

57 Pythagoras, K. N. Manouselis and T.B. Trafalis, "Architecture Selection for Neural Networks", *Proceedings of International Joint Conference on Neural Networks (IJCNN)*, IEEE Press, Honolulu, HI, May 12-17, 2002.

56. Trafalis, T.B. and B. Santosa, "Predicting Monthly Flour Prices through Neural Networks, RBFs and SVR", *ANNIE 2001*, St. Louis, MO, November 4-7, 2001.

55. Trafalis, T.B., A. White, B. Santosa and M. Richman, "Development of an Intelligent System for Improved WSR-88D Rainfall Estimation", *ANNIE 2001*, St. Louis, MO, November 4-7, 2001.

54. Trafalis, T.B., "An Analytical Center Machine", Department of Mathematics, Technical University of Athens, October 2001.

53. Trafalis, T.B., "Robust Optimization Methods in Support Vector Machines Training", *Optimization 2001*, Aveiro, Portugal, July 23-25, 2001.

52. Trafalis, T.B. and A.M. Malyscheff, "An Analytic Center Machine for Pattern Classification", *Optimization 2001*, Aveiro, Portugal, July 23-25, 2001.

51. Trafalis, T.B., "Analytic Centers, Barrier Functions and Machine Learning", workshop in New Perspectives in Kernel-Based Learning Methods, *NIPS 2000*, Breckenridge, CO, Dec. 1, 2000.

50. Trafalis, T.B. and A.M. Malyscheff, "An Analytic Center Approach to Machine Learning", presentation, *2nd Workshop on Interior Point Methods IPM-2000*, Budapest, Hungary, July 14-15, 2000.

49. Trafalis, T.B. and H. Ince, "Support Vector Machine for Regression and Applications to Financial Forecasting", Submitted to *IEEE-INNS-ENNS International Joint Conference on Neural Networks*, Como, Italy, July 24-27, 2000.

48. Malyscheff, A.M., T. B. Trafalis and S. Raman, "Determination of the Minimum Enclosing Zone using a Sequential Gradient Ascent Approach", submitted to *2000 Japan-USA Symposium on Flexible Automation*, Ann Arbor, MI, USA, July 23-26, 2000.

47. Trafalis, T.B., "Robust and Interior Point Optimization Methods in Support Vector Machine Training", *International Conference on Advances in Convex Analysis and Global Optimization*, accepted, Pythagorion, Samos, Greece, June 5-9, 2000.

46. Trafalis, T.B., "Interior Point Optimization Methods in ANNs and Support Vector Machines Training", *NIPS99*, Workshop*, Learning with SVMS: Theory and Applications*, Breckenridge, CO, December 3, 1999.

45. Kasap, S. and T.B. Trafalis, "Interior Point Methods in Engineering Optimization Problems & a New Approach to the Parameterization of the Central Trajectory", *INFORMS*, Philadelphia, PA, November 1999.

44. Trafalis T.B. and C. Jeyabalan, "Statistical Analysis of the Base Data from the WSR-88D Weather Radar and Description of Mesocyclone Features Using Neural and Radial Basis Function Networks", *ANNIE'99*, St. Louis, MO, November 1999.

43. Trafalis, T.B., "Artificial Neural Networks Applied to Financial Forecasting", *ANNIE'99*, St. Louis, MO, November 1999.

42. Trafalis, T. B., "A Hybrid Genetic Incremental Primal-Dual Algorithm for Design and Training of Multilayer Neural Networks", *Proceedings of 5th International Conference of the Decision Sciences Institute*, Athens, Greece, July 1999.

41. Trafalis, T.B. and S. Kasap, "A New Approach to the Parameterization of the Central Trajectory in the Primal Dual Interior Point Method for Linear and Convex Quadratic Programming", 1999.

40. Trafalis, T.B., "Neural Networks and Mathematical Programming", invited paper for the *Encyclopedia of Optimization*, Kluwer Academic Publishers, presented at *INFORMS 1999*.

39. Trafalis, T.B. and S. Kasap, "Differential-Algebraic Equations in Primal-Dual Interior Point Methods for Linear Programming Problems", *Smart Engineering System Design: Neural Networks, Fuzzy Logic and Evolutionary Programming*, ANNIE'98, St. Louis, MO, November 1-4, 1998.

38. Trafalis, T.B., "Primal-Dual Methods for Nonlinear Programming and Applications to Neural Networks", Institut Gerard Desargues, Universite' Claude Bernard-Lyon I, October 1998.

37. Trafalis, T.B., "An Incremental Nonlinear Primal-dual Algorithm and Applications to Artificial Neural Networks Training", *LSS'98*, July 1998.

36. Trafalis, T.B. and M. Milatovic, "Utility Functions and Radial Basis Function Networks", *11th Hellenic Conference of Statistics*, June 5-8, 1998.

35. Trafalis, T.B., "An Incremental Primal-dual Method for Nonlinear Programming Problems with Special Decomposable Structure", *APMOD'98*, Limassol, Cypress, March 11-13, 1998.

34. Trafalis, T.B. and M. Milatovic, "Radial Basis Function Networks for Effective Approximation of Multiple Criteria Decision Maker's Utility Functions", presented at *ANNIE'97*, St Louis, MO, November 1997.

33. Trafalis, T.B. and Y.-B. Liu, "Genetic Algorithms in Neural Network Training and Applications to Breast Cancer Diagnosis", presented at *ANNIE'97*, St. Louis, MO, November 1997.

32. Trafalis, T.B., N.P. Couellan, Po-I Li, G. Stumpf, C. Marzban, A. White, "An Affine Scaling Neural Network Training Algorithm for Prediction of Tornados" presented at *ANNIE'97*, St. Louis, MO, November 1997.

31. Trafalis, T.B. and N.P. Couellan, "A Stochastic Primal-Dual Technique for Nonlinear Programming", invited talk, presented at *EURO XVI*, July 12-15, 1998.

30. Trafalis, T.B., "Primal-Dual Techniques for Neural Network Training and Applications", National Center for Scientific Research *Demokritos*, Athens, GREECE, July 1997.

29. Trafalis, T.B. and N.P. Couellan, "An Incremental Primal-Dual Technique for Nonlinear Programming and Applications to Artificial Neural Network Training", *International Symposium on Mathematical Programming*, Lausanne, Switzerland, August 1997.

28. Milatovic, M. and T.B. Trafalis, "Approximation of Utility Functioning via Radial Basis Function Networks", invited talk at the *1998 Spring INFORMS/CORS* meeting, Montreal, CANADA, April 1998.

27. Trafalis, T.B. and N.P. Couellan, "An Incremental Nonlinear Primal-Dual Algorithm for Neural Network Training and Applications to Financial Forecasting", invited talk, presented at the *1998 Spring INFORMS/CORS* meeting, Montreal, CANADA, April 1998.

26. Alkahtani, R. and T.B. Trafalis, "An Interior Point Algorithm for MOLP Problems", *Joint International Meeting, EURO XV-INFORMS*, Barcelona, Spain, July 1997.

25. Trafalis, T.B., N.P. Couellan and S.C. Bertrand, "Training of Supervised Neural Networks via a Nonlinear Primal-Dual Interior Point Method, *Joint ICNN/IEEE*, Houston, TX, June 1997.

24. Trafalis, T.B. and N.P. Couellan, "Feedforward Supervised Neural Networks for Stock Price Prediction", invited speaker, *Joint International Meeting EURO XV -INFORMS*, Barcelona, Spain, July 1997.

23. Trafalis, T.B. and T. Mishina, "A Circumscribed Ellipsoid Method for Multiobjective Programming and Applications to Financial Planning", invited, *19th Meeting of the EURO Working Group on Financial Modelling*, Technical University of Crete, Chania, Greece, November 1996.

22. Trafalis, T.B., J.H. Zhu and M.M. Zaman, "Prediction of Shear Stress-Strain Behavior of Soil with Recurrent Neural Network", *ANNIE '96*, Saint Louis, MO, November 1996.

21. Trafalis, T.B., "Interior Point Methods for Global Optimization and Applications to Artificial Neural Network Training", invited talk, *International Symposium on Mathematical Programming*, Lausanne, Switzerland, August 1997.

20. Trafalis, T.B., and S. Kasap, "An Affine Scaling Scatter Search Approach for Continuous Global Optimization Problems", *ANNIE '96*, Saint Louis, MO, November 1996.

19. Trafalis, T.B. and T.A. Tutunji, "Training of Artificial Neural Networks via a Barrier Function with L_1 Norm", *ANNIE '96*, Saint Louis, MO, November 1996.

18. Trafalis, T.B., "Neural Network Training via Interior Point Methods", invited talk at *INFORMS*, Vancouver, BC, July 1996.

17. Trafalis, T.B., "Interior Point Methods for Supervised Neural Network Training", invited talk, Universite′ Blaise Pascal, Clermond Ferrand, France, July 1996.

16. Trafalis, T.B., "Deterministic and Stochastic Logarithmic Barrier Function Methods for Supervised Neural Network Training", invited talk, Department of Mathematics, Linköping University, Linköping, Sweden, June 1996.

15. Trafalis, T.B., "Interior Point Methods for Supervised Training of Artificial Neural Networks with Bounded Weights", invited talk, Technical University of Crete, Chania, Greece, May 1996.

14. Trafalis, T.B. and R.V. Parekh, "Primal-Dual Training of Artificial Neural Networks with an L_ Error", presented at *ANNIE'95*, St. Louis, MO, November, 12-14, 1995.

13. Trafalis, T.B. and I. Al-Harkan, "A Continuous Scatter Search Approach for Global Optimization", *APMOD'95*, London, UK, April 1995.

12. Trafalis, T.B., "Interior Point Algorithms in Supervised Neural Networks", invited talk, *APMOD'95*, London, UK, 1995.

11. Trafalis, T.B. and T. Tutunji, "A Quasi-Newton Barrier Function Algorithm for Artificial Neural Network Training with Bounded Weights", presented at *ANNIE ' 94*, St. Louis, MO, 1994.

10. Trafalis, T.B. and T.L. Morin, Invited Session Chair, "Short Step and Long Step Path Following Algorithms in MOLP", *TIMS XXXII*, Anchorage, Alaska, June 12-15, 1994.

9. Kapur, K. C., Byung-Rae Cho, and T. B. Trafalis, "Evaluation of Customer Satisfaction by Quality Loss Functions", *1994 International Industrial Engineering Conference*, IIE, Atlanta, GA.

8. Trafalis, T.B. and D.B. Sieger, "Logarithmic Barrier Adaptation in a Feedforward ANN", invited talk, *APMOD-93*, Budapest, Hungary, January 1993.

7. Trafalis, T.B. and D.B. Sieger, "Training of Multi-layer Feedforward ANN by a Logarithmic Barrier Function Adaptation Scheme", presented at *ANNIE'93*, Saint Louis, MO, November 1993.

6. Trafalis, T.B., "An Aspiration Interior Point Algorithm for Multiobjective Linear Programming", invited talk, *VIth CLAIO Conference*, Mexico City, Mexico, October 5-9, 1992.

5. Trafalis, T.B., A.W. Haas, and T.L. Morin, "An Interior Point Algorithm for Multiple Objective Linear Programming," *EURO XII/TIMS XXXI Joint International Conference*, Helsinki, Finland, June 29-July 1, 1992.

4. Trafalis, T.B. and T.L. Morin, "Interior Point Methods in Multiobjective Convex Optimization", invited talk at the *TIMS XXX-SOBRARO XXIII Joint International Meeting*, Rio de Janeiro, Brazil, July 15-17, 1991.

3. Trafalis, T.B., "Interior Point Methods in Generalized Programming with Convex Preferences", invited talk at the *XIV Systems Engineering Meeting*, Santiago, Chile, July 8-12, 1991.

2. Trafalis, T.B. and T.L. Morin, "New Approaches to Multiple Objective Optimization", *IFORS 90*, Athens, Greece, June 1990.

1. Trafalis, T.B., "The Method of Centers in Multiobjective Optimization", invited presentation, *University of Crete*, Iraklion, Crete, Greece, July 1989.

CONFERENCE PRESENTATIONS AND INVITED TALKS
National

84. Emre Tokgoz, Samir Alwazzi, and Theodore Trafalis, "A Heuristic Algorithm to Solve the Single-facility LRP on RMS with Energy System Applications", 2014 INFORMS meeting, San Francisco, CA, November 9-12, 2014

83. Alexander Malyscheff and Theodore Trafalis, "Kernel-based Regression in Natural Gas Storage Valuation", 2014 INFORMS meeting, San Francisco, CA, November 9-12, 2014

82. Zhen Zhang and Theodore Trafalis, "Securities Analysis of Selected Energy Companies Based on Data Mining and Machine Learning Approach", 2014 INFORMS meeting, San Francisco, CA, November 9-12, 2014

81. Emre Tokgoz, Trafalis, T. and Samir Alwazzi, S. , INFORMS 2013, "Allocation on Riemannian Manifolds," INFORMS, Minneapolis, MN, October 2013.

80. Tokgoz, E. , Trafalis, T. and Samir Alwazzi, S., INFORMS 2013, "Facility Allocation by Using Weighted Support Vector Machines," INFORMS, Minneapolis, MN, October 2013.

79. Zhang, Z. (Author & Presenter), Trafalis, T. (Author), INFORMS 2013, "Time Series Analysis for Detecting Suspicious Accounting Activities in Software Companies," INFORMS, Minneapolis, MN, October 2013.

78. Trafalis, T.(Author), H. Baroud (Author and Presenter), *INFORMS 2012 Annual Meeting,* "Bayesian kernel Models for Count Data," INFORMS, Phoenix, AZ, October 2012.

77. Trafalis, T. (Author), H. Baroud (Author and Presenter), *INFORMS Annual Meeting,* "Robust Optimization for Location Problems," INFORMS, Phoenix, AZ., October 2012

76. Trafalis, T. (Author and Presenter), and S.M.H. Manzour (Author), *INFORMS 2012 Annual Meeting*, "Robust Optimization for Location Problems," INFORMS, Phoenix, AZ, October 2012.

75. Ansaripour, A., and T. Trafalis, *INFORMS 2012 Annual Meeting*, The Robust Model for City Logistic Terminal Location," INFORMS, Phoenix, AZ, October 2012.

74. Pant, Raghav, Kash Barker and Theodore B. Trafalis, "Robust Multi-Kernel Classification of Uncertain and Imbalanced Data", *INFORMS Annual Meeting*, Charlotte, NC, November 13-16, 2011.

73. Dehghan, Ali, and Theodore B. Trafalis , "Customer Loyalty Assessment by Using Support Vector Machine ", *INFORMS Annual Meeting*, Charlotte, NC, November 13-16, 2011.

72. MacKenzie, C. and T.B. Trafalis, "Bayesian Kernel Methods for Non-gaussian Processes", *2010 INFORMS Annual Meeting,* Austin, TX, November 7-10, 2010.

71. Nourazari, S. and T.B. Trafalis, "Rule Extraction from SVMs and Applications to Medical Diagnosis", *2010 INFORMS Annual Meeting*, Austin, TX, November 7-10, 2010.

70. Trafalis, T.B., Plenary Speaker, "Kernel Methods for Imbalanced Data in the Health Sciences", *International Conference on Systems Analysis Tools for Better Health Care Delivery: A New Engineering/Health Care Partnership*, Gainesville, Florida, March 24 - 26, 2010.

69. Gilbert, R.C., T.B. Trafalis, M.B. Richman and L.M. Leslie, "Machine learning methods for data assimilation", *Artificial Neural Networks in Engineering (ANNIE2010)*, Saint Louis, MO, November, 2010 (presenter T. B. Trafalis).

68. Adrianto, I., M.B. Richman and T.B. Trafalis, "Machine learning techniques for imbalanced data: an application for tornado data", *Artificial Neural Networks in Engineering (ANNIE2010)*, Saint Louis, MO, November, 2010 (presenter T. B. Trafalis).

67. Trafalis, T. B., Recent Developments of Kernel Methods in Weather Prediction and Applications, Plenary talk, Artificial Neural Networks in Engineering (ANNIE2010), Saint Louis, MO, November, 2010 (presenter T. B. Trafalis)

66. Gilbert, R.C. T.B. Trafalis, M.B. Richman and S. Lakshmivarahan, "Real-time Prediction Using Kernel Methods and Data Assimilation," *Artificial Neural Networks in Engineering (ANNIE'09)*, St. Louis, MO, November 2009.

65. Malyscheff, A.M. and T.B. Trafalis, "Support Vector Machine Learning in Energy Forward Markets," *INFORMS*, San Diego, CA, October 2009.

64. Trafalis, T.B., "Kernel Methods and Applications", guest invited lecture, School of IE, Mississippi State University, November 2008.

63. Trafalis, T.B., "Kernel Methods and Applications to Rainfall Estimation", National Weather Service Seminar Series, National Weather Center, Norman, OK, May 7, 2008.

62. Trafalis, T.B., "Dynamic Forecasting Using Kernel Methods", Sensors 2008, Shalimar, FL, April 24-26, 2008.

61. Pitman, J., H. Pham, H. Tran, M. Court, C. Ling, T.B. Trafalis and D. Goldsman. "Dynamic Modeling of Cognitive Behavior and Movement when Simulating Large Population Evacuations", *Institute of Industrial Engineering Annual Conference,*, May 2007.

60. Trafalis, T.B. and R.C. Gilbert, "Peptide extraction using regular expressions and support vector machines", INFORMS Annual Meeting 2007, Seattle, WA, November 4-7, 2007.

59. Gilbert, R. C., T. B. Trafalis and J. D. Wren, "Scalable methods of locating peptide sequence data within full-text articles", poster presentation at the *4th Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, MCBIOS IV*, New Orleans, Louisiana, February 2, 2007.

58. Trafalis, T.B. and R.C. Gilbert, "Maximum Margin Classifiers with Noisy Data: A Robust Optimization Approach", *Conference on Data Mining in Biomedicine*, University of Florida, Gainesville, FL., February 2-4, 2005.

57. Trafalis, T.B., S. Raman, and R.C. Gilbert, "Adaptive Methods in Coordinate Metrology", *SPIE,* Optics East, Boston, MA, October 23-26, 2005.

56. Barker, K., T.B. Trafalis, and T. Reed Rhoads, "Learning From Student Data", *2004 Systems and Information Engineering Design Symposium*, Blacksburg, Virginia, 2004**.**

55. Trafalis, T.B., B. Santosa and T. Conway, "Knowledge Base-Clustering of Multi-Class SVM for Genes Expression Analysis", *INFORMS*, Denver, CO, October 2004**.**

54. Oladunni, O. and T.B. Trafalis, "Single Phase Fluid Flow Classification via Neural Networks & Support Vector Machine", *Data Mining Research Workshop*, Tulsa, OK, February 6, 2004.

53. Barker, K., T.B. Trafalis and T.R. Rhoads,"Predicting Freshman Retention", *Data Mining Research Workshop*, Tulsa, OK, February 6, 2004.

52. Trafalis, T.B. and A. Malyscheff, "An Analytic Center Machine", *INFORMS Annual Meeting*, Miami, FL, November 4-7, 2001.

51. Trafalis, T.B. and A. Malyscheff, "An Analytic Center Machine for Pattern Classification", *INFORMS Annual Meeting*, Miami, FL, November 4-7, 2001.

50. Trafalis, T.B., T. Evgeniou and H. Ince, "Learning with Very Large Datasets", *INFORMS Annual Meeting*, Miami, FL, November 4-7, 2001.

49. Ince, H. and T.B. Trafalis, "Decomposition Techniques in Support Vector Machines Training", *INFORMS Annual Meeting*, Miami, FL, November 4-7, 2001.

48. Trafalis, T.B., "Robust Optimization Methods in Support Vector Machines Training", *INFORMS Annual Meeting*, Miami, FL, November 4-7, 2001.

47. Rodera, H., M.J. Bagajewics and T.B. Trafalis, "Mixed Interger Multiobjective Process Planning under Uncertainty", *AICHE Annual Meeting*, Los Angeles, CA, November 12-17, 2000.

46. Ince, H. and T.B. Trafalis, "Support Vector Machines and Applications to Financial Forecasting", *INFORMS 2000*, San Antonio, TX, November 2000.

45. Trafalis, T.B. and A. Malyscheff, "An Analytic Center Machine", poster presentation *NSF/EPSCOR, XII Annual Meeting*, Puerto Rico, May 26-28, 2000.

44. Trafalis, T.B. and A. Malyscheff, "Training Support Vector Machines using Interior Point Methods", invited talk, *INFORMS 2000*, Salt Lake City, UT, May 2000.

43. Trafalis, T.B. and S. Kasap, "A Hybrid Scatter Genetic Tabu Search for Continuous Global Optimization", invited talk, *INFORMS 2000*, Salt lake City, UT, May 2000.

42. Trafalis, T.B. and S. Kasap, "An Overview of Mean Field Theory from Statistical Physics in Combinatorial Optimization", *Cincinnati INFORMS*, Ohio, May 2-5, 1999.

41. Trafalis, T.B., "Optimization in Neural Networks and Financial Engineering", *Center for Engineering Optimization*, University of Oklahoma, December 1997.

40. Trafalis, T.B., T. Terlaky, W.P. Warners and C. Ross, "Unsupervised Neural Network Training via a Potential Reduction Approach", *INFORMS*, Dallas, TX, Fall 1997.

39. Trafalis, T.B., and N.P. Couellan, "Nonlinear Primal-Dual Methods for Neural Network Training and Applications", *INFORMS*, Dallas, TX, Fall 1997.

38. Trafalis, T.B. and Tsutomu Mishina, "A Circumscribed Ellipsoid Method for Multiobjective Optimization and Applications", *INFORMS*, Dallas, TX, Fall 1997.

37. Trafalis, T.B. and N.P. Couellan, "Incremental Nonlinear Primal-Dual Methods for Supervised Neural Network Training", *INFORMS*, Dallas, TX, Fall 1997.

36. Trafalis, T.B. and N.P. Couellan, "Primal-Dual Interior Point Methods for Supervised Learning", invited talk, *INFORMS*, Dallas, TX October 1997.

35. Trafalis, T.B., N.P. Couellan and S.C. Bertrand, "Training of Supervised Neural Networks via a Primal-Dual Interior Point Method for Nonlinear Programming", *MASECT '96*.

34. Trafalis, T.B., I.M. Al-Harkan and S. Kasap, "A Hybrid Affine Scaling Scatter Search Approach for Continuous Global Optimization", *INFORMS*, San Diego, CA, invited talk, May 1997.

33. Trafalis, T.B., "Stochastic Logarithmic Barrier Functions and Applications to Neural Network Training", *INFORMS*, San Diego, CA, invited talk, May 1997.

32. Trafalis, T.B., J.P. Warners and T. Terlaky, "A Potential Reduction Method for Unsupervised Learning", *INFORMS*, San Diego, CA, invited talk, May 1997.

31. Trafalis, T.B., "Stochastic Interior Point Methods for Global Optimization", *INFORMS*, San Diego, CA, invited talk, May 1997.

30. Trafalis, T.B. and S. Kasap, "An Affine Scaling Scatter Search Approach for Global Optimization", invited presentation, *INFORMS*, Atlanta, GA, November 1996.

29. Trafalis, T.B. and N.P. Couellan, "Training of Artificial Neural Networks via Primal-Dual Interior Point Methods", invited speaker at *INFORMS* meeting, Atlanta, GA, November 1996.

28. Trafalis, T.B. and T.A.Tutunji, "A Stochastic Logarithmic Barrier Function for Global Optimization", invited speaker at *INFORMS* meeting, Atlanta, GA, November 1996.

27. Trafalis, T.B., "Neural Network Training via Interior Point Algorithms", invited talk, *Conference on Network Optimization*, University of Florida, Gainsville, FL, February 12-14, 1996.

26. Trafalis, T.B., and S.H. Vasilev, "On the Dynamics of Surfaces Under the Flows of Interior Point Method Fields," *INFORMS*, Washington, DC, May 1996.

25. Trafalis, T.B., N.P. Couellan, and T. Tutunji, "Interior Point Methods in Neural Network Training", *INFORMS* meeting, Washington, DC, May 1996.

24. Trafalis, T.B. and N.P. Couellan, "Neural Network Training via Quadratic Programming", *Fifth INFORMS Computer Science Technical Section Conference*, Dallas, TX, January 8-10, 1996.

23. Trafalis, T.B. and A. Maria, "Multiple Start Interior Point Methods for Nonconvex Optimization with a Convex Feasible Region", *INFORMS* meeting, New Orleans, October 1995.

22. Trafalis, T.B., K.C. Kapur, and B.R. Cho, "Quality Evaluation by Quadratic Loss Function", *Proceedings of Quality Leadership Symposium*, April 19-20, 1994.

21. Trafalis, T.B., S. Pulat, and N.P. Couellan, "Application of Interior Point Methods to a Project Management Problem", *ORSA/TIMS Spring 1994*, Boston, April 1994.

20. Trafalis, T.B., "Neural Network Training via an Affine Scaling Algorithm", *ORSA/TIMS, Spring, 1994*, Boston, April 1994.

19. Trafalis, T.B., "Neural Network Training via Interior Point Methods", session chair, *ORSA/TIMS, Phoenix '93*, November 1993.

18. Trafalis, T.B., "Interactive IPMS in Multiobjective Large Scale LP", *ORSA/TIMS Phoenix, '93*, November 1993.

17. Trafalis, T.B., "A Homotopy Approach for Computing an Interior Point of a Convex Body", session chair, *ORSA/TIMS, Phoenix '93*, November 1993.

16. Trafalis, T.B., "Interactive Interior Point Methods in Large Scale Multiobjective Optimization", invited talk, *ORSA/TIMS, Phoenix '93*, November 1993.

15. Trafalis, T.B., "A Barrier Function Learning Algorithm in Supervised Learning", session chair, presented at the *ORSA/TIMS* meeting, Chicago, May 17, 1993.

14. Varanasi, B., B.L. Foote, and T.B. Trafalis, "A Surface Point Method for Linear Programming", *ORSA/TIMS*, Chicago, 1993, May 16-19, 1993.

13. Trafalis, T.B., "Recent Advances in Interior Point Methods", invited talk, *Computer Science Seminar*, University of Oklahoma, February 1993.

12. Trafalis, T.B., A.W. Haas, and T.L. Morin, "Homotopies Computing Interior Points of Polyhedra", session chair, *ORSA/TIMS San Francisco*, San Francisco, California, November 1-4, 1992.

11. Trafalis, T.B., "A Method of Centers that Computes Pareto Solutions of Cooperative Games in Polynomial Time," session chair, presented at the *TIMS/ORSA Joint National Meeting*, Orlando, Florida, April 26-29, 1992.

10. Trafalis, T.B., "Interior Point Methods in Backpropagation Neural Networks", presented at the *ORSA/TIMS Joint National Meeting*, Anaheim, California, November 3-6, 1991.

9. Trafalis, T.B., T.L. Morin, and M.J. Kaiser, "Centers and Invariant Points of Convex Bodies", presented at the *Joint National ORSA/TIMS Meeting*, Philadelphia, October 1990.

8. Trafalis, T.B., T.L. Morin, and A. Haas, "An Implementation of an Interior Algorithm for Multiobjective Optimization", presented at the *Joint National ORSA/TIMS Meeting*, Las Vegas, NV, May 1990.

7. Trafalis, T.B., "Interior Point Algorithms and Multiobjective Optimization", School of Industrial Engineering, University of Oklahoma, March 7, 1990.

6. Trafalis, T.B., "Interior Point Algorithms and Multiobjective Optimization", Department of Management Sciences, University of Iowa, January 1990.

5. Trafalis, T.B., "Polynomial Time Path Following Algorithm of Centers for Linear Multiobjective Optimization", submitted to the Second Asilomar Workshop on Progress in Mathematical Programming that was held at the *Asilomar Conference Center*, Monterey, CA, February 1990.
4. Trafalis, T.B. and T.L. Morin, "An Efficient Face of a Polytope", presented at the *Joint National ORSA/TIMS Meeting*, New York, NY, October 1989.
3. Trafalis, T.B. and T.L. Morin, "Interior Algorithm for Multiobjective Optimization", presented at the *Joint National ORSA/TIMS Meeting*, Vancouver, B.C., May 1989.
2. Abhyankar, S., T.B. Trafalis, and T.L. Morin, "Maximal Facets of a Polytope: Parametrization of Hyperellipsoids and their Application in Multiple Objective Optimization", *1988 AMS-IMS-SIAM Summer Research Conference on Mathematical Developments Arising from Linear Programming*, Bowdoin College, Bowdoin, Maine, June 25-July 1, 1988.
1. Berkovitz, L.D., T.L. Morin, and T.B. Trafalis, "Differential DP for Differential Games", *TIMS/ORSA Washington DC Meeting*, April 25-17, 1988.

CONFERENCE PRESENTATIONS AND INVITED TALKS
Regional
5. Trafalis, T.B., S. Raman, K.K. "Muralee" Muraleetharan, "Cascading Failures in a System of Systems and Intelligent Resource Allocation for Rapid Recovery", presentation *OU Sustainability Group*, September 26, 2011.
4. Trafalis, T.B. and M. Richman, "Kernel Methods: A success story in severe weather prediction", workshop in *Prediction Engineering: Success & Vision*, University of Oklahoma, November 30, 2005.
3. Adrianto, I., T. B. Trafalis, and V. Lakshmanan, "Application of support vector machines to the spatiotemporal tornado prediction", *Research Experiences Symposium, Embedded, Machine Learning Systems*, University of Oklahoma, Norman, OK, October 15, 2005.
2. Adrianto, I., T. B. Trafalis, and V. Lakshmanan, "Application of support vector machines to the spatiotemporal tornado prediction", *Oklahoma Supercomputing Symposium*, University of Oklahoma, Norman, poster presentation, October 4, 2005.
1. Trafalis, T.B., "Partnership for Research in Data Mining: A partnership of OSU, OU and TU", presentation at OU Medical Center, *EPSCOR Competition for NSF RII Scientific Theme Selection*, April 9, 2004.

TECHNICAL REPORTS
5. Trafalis, T.B., T. Terlaky, and J.P. Warners, "Unsupervised Neural Network Training Via a Potential Reduction Approach", *Technical Report,* Faculty of Technical Mathematics and Informatics, Delft University of Technology, Delft, Netherlands, 1996.
4. Roos, C., T. Terlaky, T. Trafalis, "Solving Linear Systems with Low-Rank Updates", *Technical Report* , Faculty of Technical Mathematics and Informatics, Delft University of Technology, Delft, Netherlands, 1996.
3. Kaiser, M.J., T.L. Morin and T.B. Trafalis, "Centers and Invariant Points of Convex Bodies", Institute of Interdisciplinary Engineering Studies, *Technical Report*, **CC-90-1**, University Research Initiative in Computational Combinatorics, Purdue University.
2. Abhyankar, S., T.B. Trafalis, and T.L. Morin, "Efficient Faces of Polytopes: Interior Point Algorithms, Parametrization of Algebraic Varieties and Multiple Objective Optimization", Institute of Interdisciplinary Engineering Studies, *Technical Report*, **CC-89-1**, University Research Initiative in Computational Combinatorics, Purdue University.
1. Berkovitz, L.D., T.L. Morin, and T.B. Trafalis, "Differential DP for Differential Games", Institute of Interdisciplinary Engineering Studies, *Technical Report* **CC-88-30**, University Research Initiative in Computational Combinatorics, Purdue University.

BOOK REVIEWS

TRAFALIS, THEODORE B.

Neural Networks: Algorithms, Applications and Programming Techniques, J.A. Freeman and D.M. Skapura, (1992), [Review published in *Journal of Information Systems and Operational Research*, November 1995, pp. 279-289].

POSTGRADUATE SUPERVISION
9**.**	Maher Maalouf**,** 2010-2011
8.	Robin Gilbert, Fall and Spring 2011
7.	Indra Adrianto, Summer and Fall 2008
6.	Tayo Oladunni, 2006
5.	Son Hyung Jin, 2006
4.	Samir Al-Wazzi, 2003 – 2006.
3.	Alexander M. Malyscheff, Spring 2002 and academic year 2003.
2.	Tsutomu Mishina, Fall 1996, Spring 1997.
1.	Byung-Rae Cho, Spring and Summer 1994.

GRADUATE PROGRAM SUPERVISION

Ph.D.'s GRADUATED:
18.	Robin Charles Gilbert, "Unconstrained Learning Machines", Spring 2010, (Senior researcher, INTEL Corporation).
17.	Maher Maalouf, "Robust Weighted Kernel Logistic Regression in Imbalanced and Rare Events Data"*,* Fall 2009 (Assistant Professor, Khalifa University, Abu-Dabi).
16.	Hicham Mansouri, "Robust On-line Reinforcement Learning Using Kernels", Spring 2008, (PCI).
15.	Indra Adrianto, "The P-Center Based Kernel Machines And Applications", Spring 2008, (Researcher, Oklahoma Medical Research Foundation).
14.	Eugene A. Beardslee, "Dynamic Optimization of Service Part Inventory Control Policy through Applied Data Mining and Simulation", Spring 2007**.**
13.	Tayo Oladunni, "Least Square Multi-class Kernel Machines with Prior Knowledge and Applications", Spring 2006, (IBM).
12.	Jin Park, "Uncertainty and Sensitivity Analysis in Support Vector Machines: Robust Optimization and Uncertain Programming Approaches", Spring 2006.
11.	Son Hyung Jin, "Incremental Kernel Learning Algorithms and Applications", Spring 2006.
10.	Budi Santosa, "Learning from Data with Uncertainty Robust Multi-class Kernel-based Classifiers and Regression", (Lecturer at ITS, Surabaya, Indonesia), Spring 2005.
 9.	Suat Kasap, "Differential Algebraic Equations in Primal-Dual Interior Point Optimization Methods: A New Approach to the Parameterization of the Central Trajectory", Ph.D., University of Oklahoma, Spring 2003, (Assistant Professor, Hacettepe University, Ankara, Turkey).
 8.	Samir Al-Wazzi, "Robust Optimization in Support Vector Machines Training and Applications", Fall 2002.
 7.	Hussein Ince, "Decomposition Techniques for Support Vector Machines Training and Applications", Fall 2002. (Associate Professor, School of Business Administration Gebze Institute of Technology, Turkey)
 6.	Alexander M. Malyscheff, "Optimization Issues in Data Analysis: An Analytic Center Approach to Kernel Methods", Ph.D., University of Oklahoma, Spring 2001. (Senior Researcher, ECE, OU)
 5.	Nicolas P. Couellan, "Primal-Dual Techniques for Nonlinear programming and Applications to Artificial Neural Network Training", Ph.D., University of Oklahoma, Summer 1997 (Adjunct professor, University of Toulouse, Toulouse, France)
 4.	Tsutomu Mishina, "A Circumscribed Ellipsoid Method for Multiobjective Programming with Applications to Robust Optimization", Ph.D., Summer 1996. (currently Professor, Akita Prefectural University, Japan)

TRAFALIS, THEODORE B.

3. Tarek Tutunji, "Barrier Functions and Quasi-Newton Methods in ANN Training", Ph.D., University of Oklahoma, Spring 96 (Chair, Mechatronics Engineering Department, Philadelphia University, Amman, Jordan).
2. Rashid M. Al-Kahtani, "Interactive Interior Point Cutting Plane Algorithm for Large Scale Multiobjective Linear Programming", Ph.D., 1995. (currently Professor, King Saud University, Riyadh, Saudi Arabia).
1. Byung-Rae Cho, "Optimization Issues in Quality Engineering", Ph.D., University of Oklahoma, 1993. (Nominated for best dissertation in IE, 1993), co-chair with Dr. K. Kapur. (Currently Graduate Coordinator and Professor of Industrial Engineering, Clemson University, SC), (Professor of the year, 1996 and 2011).

Ph.D. SUPERVISION IN PROGRESS
1. Zhang, Zhen, expected Fall 2015.

M.S. GRADUATED (with Thesis)
9. Ching-Yi McCue, Fall 2013.
8. Xiao Yang, "Robust Multi-Objective Optimization and an Application in Manufacturing", Fall 2011.
7. Robin Gilbert, "Learning With Kernels and Applications", May 2006.
6. Aymeric Play, "Integer Programming Applied to Classification", M.S., Fall 2005.
5. Delphine Alonso, "Integer Programming Applied to Regression", M.S., Fall 2005.
4. Jayabalan Chidambaran, "Statistical Analysis of the Base Data from the WSR-88D Weather Radar and Description of Mesocyclone Features Using Neural Networks", M.S., Spring 1998.
3. Nicolas P. Couellan, "Artificial Neural Network Training via Interior Point Methods", M.S., Spring 1995 (Best M.S. Thesis Award, School of Industrial Engineering, University of Oklahoma).
2. Rupesh Parekh, "Radial Basis Function Network Training via Interior Point Methods". M.S., Spring 1996. (Outstanding International Student of the Year, 1994, University of Oklahoma).
1. Balarama Varanasi,"A Proposed Surface Point Method for LP with an Interface for LP", M.S., Spring 1993. Co-advised with B.L. Foote.

PhD and MS COMMITTEES
Have served on more than 80 PhD and MS committees.

INTERNATIONAL STUDENT INTERNSHIP ADVISING
7. Robin Gilbert, CUST, Universite' Blaise Pascal, Clermont Ferrand, France, 2004.
6. Frederique Ray, CUST, Universite' Blaise Pascal, Clermont Ferrand, France, 2001; project title: "Support Vector Machines for Predicting Election Results".
5. Aline Fras, CUST, Universite' Blaise Pascal, Clermont Ferrand, France, 1999, advised in collaboration with A. White, OSF.
4. Fre′de′ric Bothamy, Institut Supe′rieur d′Informatique, de Mode′lisation et de leurs Applications (ISIMA), Clermont Ferrand, France, April - October 1997; project title: "Genetic Algorithms and Neural Networks".
3. Se′bastien Bertrand, Institut Supe′rieur d′Informatique, de Mode′lisation et de leurs Applications (ISIMA), Clermont Ferrand, France, April - October 1996; project title: "Training of Supervised Neural Networks via a Primal-Dual Interior Point Method for Nonlinear Programming".
2. Yseult Garnier, CUST, Universite' Blaise Pascal, Clermont Ferrand, France, 1995; project title: "Experimental Study of an Affine Scaling Scatter Search Method for Global Optimization".
1. N.P. Couellan, CUST, Universite' Blaise Pascal, Clermont Ferrand, France, 1993; project title: "Interior Point Methods".

TRAFALIS, THEODORE B.

DESIGN PROJECT FACULTY ADVISOR FOR GRADUATING SENIORS

Tinker AFB, GM, Macklanburg Duncan, Academic Computing, Oklahoma Natural Gas, AT&T, Seagate, Unit Parts, UPONOR, COMP ONE, UPS, Astellas Pharma Technologies, Inc., Regional Food Bank, FAA.

RESEARCH FUNDING

Internal

[8] Cascading Events, Southern Climate Impacts Planning Program, 5/12 – 5/14. (Co-PI).

[7] Presidential International Fellowship, The University of Oklahoma, June-July, 2011.

[6] PI, "Primal-Dual Methods in Artificial Neural Networks", OU Office of Research Administration, December 1996.

[5] President's International Travel Fellowship, OU International Office, March 1996.

[4] Co-Principal Investigator, "Fractal Approach to Intelligent Database Search", Center for Information Technology and Computing", University of Oklahoma, May 15 - August 15, 1995.

[3] Principal Investigator, "Multi-start Interior Point Methods for LP: Techniques, Parallel Algorithms and Implementation", Center for Information Technology and Computing, University of Oklahoma, May 15, 1995 - August 15, 1995.

[2] Junior Faculty Summer Research Fellowship, Interior Point Methods in Neural Networks, University Research Council, University of Oklahoma, June 1992 - August 1992.

[1] Halliburton Faculty Development Fellowship, University of Oklahoma, Summer 1992.

RESEARCH FUNDING

External

[14] Bayesian Kernel Methods for Non-Gaussian Distributions: Binary and Multi-class Classification Problems, US DOD, 8/1/12 – 5/31/13. (Co-PI).

[13] Acquisition of Extensible Petascale Storage for Data Intensive Research, NSF, 11/01/2010 - 10/31/2013. (Co-PI)

[12] CI Team Demonstration: Scalable Cyberinfrastructure for Bioinformatics and Beyond, NSF, 12/1/2006 to 11/30/2010. (Co-PI, extension)

[11] CI TEAM Demonstration: Scalable Cyberinfrastructure for Bioinformatics and Beyond, NSF, 10/1/05 - 09/30/07. (Co-PI)

[10] Adaptive Methodologies for Coordinate Verification, NSF, 9/1/04-8/31/07, extended twice, 8/31/08, 8/31/09. (Co-PI)

[9] ITR: A Real Time Mining of Integrated Weather Data, NSF, 9/15/02 – 7/31/07. (PI)

[8] Globally Optimal Neural Computing Algorithms and Applications, NSF, 8/1/01-7/31/03. (PI)

[7] Support Vector Machines in Decision Making, Akita Perfectural University, Akita, Japan, Research Fellow, 6/18/2001 through 7/17/2001. (PI)

[6] Robust and Interior Point Optimization Methods, NSF, 1/15/99 - 6/30/2001. (PI)

[5] Development of an Intelligent System for Improved WSR-88D Rainfall Estimation, NOAA-NWS-OSF, 6/15/99 - 8/15/99. (PI)

[4] Delft University of Technology, Delft, Netherlands, Research Fellow, 5/28/96 through 7/29/96.

[3] NSF, Research Initiation Awards, "Interior Point Methods in Artificial Neural Networks", 8/1/92 through 7/31/96. (PI)

[2] Center of Advanced Studies, University of Iowa, Faculty Research Seminar/Oberman Fellowship "Optimization in Theory and Practice", 8/2/94 through 8/12/94.

[1] Research Assistant Support, OCIDM (Oklahoma Center for Integrated Design Manufacturing), May 15 - August 15, 1992

LABORATORY DEVELOPMENT

Developed a laboratory for Optimization and Intelligent Systems.