CURRICULUM VITÆ

Name: Luis Nunes Vicente

Nationality: Portuguese (born 1967)

Current Address:

Department of Industrial and Systems Engineering
Lehigh University
Harold S. Mohler Laboratory, Room 421
200 W. Packer Ave.
Bethlehem, PA 18015-1582
Phone: 610-758-4050
Fax: 610-758-4886

Contact: `lnv@lehigh.edu` `http://www.lehigh.edu/lnv` [he/his/him]

1 Education

- Ph.D. in Applied Mathematics, Rice University, USA, 1996.
- M.A. in Applied Mathematics, Rice University, USA, 1994.
- B.S. in Mathematics (and Operations Research), University of Coimbra, Portugal, 1990.

2 Positions

- Timothy J. Wilmott Endowed Chair Full Professor and Department Chair, Department of Industrial and Systems Engineering, Lehigh University, August 2018 –.
- Tenured Full Professor, Department of Mathematics, University of Coimbra, January 2009 – August 2018.
- Research Member of the Centre for Mathematics of the University of Coimbra, January 1998 –.
- Visiting Full Professor, Department of Computational and Applied Mathematics, Rice University, August 2016 – May 2017.
- Invited Full Professor, Sapienza Universitá di Roma, June-July 2016.
- Visiting Chercheur Sénior of the Fondation de Coopération Sciences et Technologies pour l'Aéronautique et l'Espace (Réseau Thématique de Recherche Avancée), at CERFACS and Institut National Polytechnique, Toulouse, 2010 – 2015.
- Academic Visitor, Courant Institute of Mathematical Sciences, NYU, September 2009 – April 2010.

- Professeur des Universités, Université Paul Verlaine, Metz, May-June 2009, 2010.
- Associate Professor (tenured, holding *agregação*), Department of Mathematics, University of Coimbra, July 2004 – December 2008.
- Associate Professor (with tenure), Department of Mathematics, University of Coimbra, May 2002 – June 2004.
- Academic Visitor, IBM T. J. Watson Research Center, Mathematical Sciences Department, September 2002 – June 2003.
- Long Term Visitor, IMA, University of Minneapolis, January – March 2003.
- Assistant Professor, Department of Mathematics, University of Coimbra, September 1996 – May 2002.
- Academic Visitor, IBM T. J. Watson Research Center, Mathematical Sciences Department, June and July 1996.
- Ph.D. Student, Rice University, August 1993 – May 1996.
- Teaching Assistant, Department of Mathematics, University of Coimbra, November 1990 – August 1993.
- Monitor, Department of Mathematics, University of Coimbra, November 1988 – November 1990.

3 Awards

- SIAM Fellow (Class of 2024), Society for Industrial and Applied Mathematics.
- 2019 COAP Best Paper for *S. Gratton, C. W. Royer, L. N. Vicente, and Z. Zhang, Direct search based on probabilistic feasible descent for bound and linearly constrained problems, Computational Optimization and Applications, 72 (2019) 525-559* (2 papers selected as winners among 92).
- Co-recipient in 2015 of the Lagrange Prize of SIAM (Society for Industrial and Applied Mathematics) and MOS (Mathematical Optimization Society), given every three years for outstanding works in the area of Continuous Optimization.
- 94-96 Finalist of the A. W. Tucker Prize of the Mathematical Optimization Society.
- Ralph Budd Award for the best doctoral thesis of 1996 in the School of Engineering of Rice University.
- Doutor João Farinha Award for the student who finishes a BS in mathematics with the highest GPA.

4 Fellowships (selected)

- Fulbright Scholar to Rice University, August 1993 – May 1996.
- NATO Scholar to Rice University, August 1993 – May 1996.

5 Membership of international societies

- Mathematical Optimization Society (MOS).
- Society for Industrial and Applied Mathematics (SIAM).
- The Institute for Operations Research and the Management Sciences (INFORMS) (Senior Member).
- Institute of Industrial and Systems Engineers (IISE).

6 Teaching

- 1996/1997: Calculus (fall and spring), Computacional Mathematics (spring) – computer science undergraduate program
- 1997/1998: Calculus (fall and spring), Computacional Mathematics (spring) – computer science undergraduate program
  Topics of Convex Analysis and Optimization (fall) – math. graduate program
- 1998/1999: Calculus (fall and spring), Computacional Mathematics (spring) – computer science undergraduate program
  Topics of Convex Analysis and Optimization (fall) – math. graduate program
- 1999/2000: Calculus (spring) – computer science undergraduate program
  Nonlinear Programming (spring) – math. undergraduate program
- 2000/2001, 2001/2002: Linear Algebra (fall) – undergraduate program in sciences and engineering
  Nonlinear Programming (spring) – math. undergraduate program
- 2003/2004: Advanced Linear Algebra (spring) – undergraduate program in visual information technology for design
  Nonlinear Programming (spring) – math. undergraduate program
- 2004/2005, 2005/2006: Numerical Mathematics (fall) – math. undergraduate program
  Mathematical Finance (spring) – math. undergraduate and graduate programs
- 2006/2007: Numerical Mathematics (fall) – math. undergraduate program
  Mathematical Finance (fall) – math. undergraduate and graduate programs
  Optimization Methods in Finance (spring) – math. graduate program

- 2007/2008: Object-Oriented Programming (spring) – math. undergraduate and graduate programs
  Optimization Methods in Finance (spring) – math. graduate program
- 2008/2009: Object-Oriented Programming (spring) – math. undergraduate and graduate programs
  Optimization Methods in Finance (spring) – math. graduate program
  Optimization (spring) – PhD math. program
- 2010/2011: Numerical Optimization (fall) – math. graduate program
  Optimization Methods in Finance (spring) – math. and quantitative finance graduate programs
  Optimization (spring) – PhD math. program
- 2011/2012,2012/2013,2013/2014,2014/2015,2015/2016: Optimization Methods in Finance (fall) – math. and quantitative finance graduate programs
  Numerical Optimization (spring) – math. graduate program
  Mathematical Finance (spring) – math. and quantitative finance graduate programs
- 2016/2017: At Rice University: Numerical Analysis (CAAM453/CAAM550), Numerical Optimization (CAAM564), and Topics Course *Derivative-Free Optimization: Basic Principles and State of the Art* (CAAM654).
- 2017/2018: Computational Mathematics (fall, 1/3 of the course) – PhD math. program
  Object-Oriented Programming (spring) – math. undergraduate program
  Numerical Optimization (spring) – math. graduate program
- 2018/2019: At Lehigh University: Optimization Methods in Machine Learning (ISE444).
- 2019/2020, 2020/2021, 2022/2023: At Lehigh University: Operations Research Special Topics (ISE431).
- 2021/2022,2023/2024: At Lehigh University: Special Topics in Industrial & Systems Engineering (ISE405).

7 Postdocs and Students Supervised

7.1 Postdoctoral Researchers

- E. Mostafa, February 2001 – July 2002.
- R. Silva, January 2008 – April 2009.
- S. R. Pattanaik, August 2011 – July 2012.
- M. Poss, September 2011 – August 2012.
- Z. Zhang, September 2012 – August 2014.
- R. Garmanjani, January 2013 – 2018.
- T. Giovannelli, June 2021 – August 2024.

7.2 Ph.D. Students

- C. P. Avelino, On Augmented Lagrangian Multiplier Methods, June 1999 – July 2004.
- A. L. Custódio, Applications of Simplex Derivatives to Direct Search Methods, January 2003 – September 2007.
- R. Silva, Analysis and Implementation of Filter Primal-Dual Interior-Point Methods for Non-Linear Programming, May 2001 – October 2007.
- A. M. Monteiro, Estimating Risk-Neutral Probability Density Functions from Options Prices, July 2000 – April 2008.
- R. Garmanjani, Smoothing and Worst Case Complexity for Direct-Search Methods in Non-Smooth Optimization, September 2009 – December 2012.
- M. Li, Inexactness in Decomposition Methods for MINLP, September 2009 – April 2013.
- Y. Diouane (in co-supervision with Professor Serge Gratton at the Institut National Polytechnique de Toulouse), Globally Convergent Evolution Strategies with Application to an Earth Imaging Problem in Geophysics, September 2011 – October 2014.
- M. Dodangeh, Worst Case Complexity of Direct Search under Convexity, September 2011 – November 2014.
- D. Júdice, Trust-Region Methods without using Derivatives: Worst Case Complexity and the Non-Smooth Case, September 2012 – December 2015.
- C. W. Royer (in co-supervision with Professor Serge Gratton at the Université Toulouse 3 Paul Sabatier), Derivative-Free Optimization Methods based on Probabilistic and Deterministic Properties: Complexity Analysis and Numerical Relevance, September 2013 – November 2016.
- L. Song, Modeling Hessian-Vector Products in Nonlinear Optimization: New Hessian-Free Methods, September 2017 – January 2021.
- S. Liu (at Lehigh University), Stochastic Multi-Objective Optimization and Its Application to Fairness in Machine Learning, September 2018 – May 2022.
- O. Sohab (at Lehigh University), September 2019 –.
- G. Kent (at Lehigh University), September 2021 –.
- A. Ding (at Lehigh University), September 2023 –.
- J. Tan (at Lehigh University), September 2023 –.

7.3 Master Students

- H. Rocha, Pattern Search Methods for Molecular Geometry Problems, October 1998 – March 2001.

- R. D. Silva, The Primal-Dual Interior-Point Method for Nonlinear Optimization and its Globalization by the Filter Technique, October 1999 – June 2002.
- M. Figueiredo (co-advised), An Instance of the Tri-Dimensional Bin Packing Problem, September 2007 – July 2008.
- S. Neves (co-advised), Optimization of Routes in Storage Information Centers, September 2007 – July 2008.
- M. Caceiro, Robust Optimization Problems in Portfolio Selection, March 2006 – July 2009.
- A. Bandeira, Computation of Sparse Low Degree Interpolating Polynomials and their Application to Derivative-Free Optimization, October 2009 – July 2010.
- M. Cavaleiro, Sparse Nonlinear Recovery, September 2010 – July 2011.
- R. P. Brito, Efficient Cardinality/Mean-Variance Portfolios, September 2011 – January 2012.
- X. Fernandes, Mathematical Modeling of Option Prices in the Electric Power Sector, September 2012 – September 2013.
- J. Rodrigues, Measuring and Optimizing Risk in Portfolio Selection, September 2014 – July 2015.
- G. Galvan (in co-supervision with Professor Marco Sciandrone at the Università degli Studi di Firenze), Optimization Methods for Recurrent Neural Networks Training, May 2015 – April 2016.
- M. Sereni (in co-supervision with Professor Marco Sciandrone at the Università degli Studi di Firenze), Feature Selection using LASSO Sparse Optimization Methods, May 2015 – April 2016.
- G. Kent (at Lehigh University), On the Steepest Descent Method for Bilevel Optimization, September 2020 – July 2021.

8 Research

8.1 Research Interests

Continuous Optimization, Computational Science and Engineering, and Machine Learning and Data Science.

8.2 Editorial Boards

- Associate Editor, Computational Management Science, 2005-.
- Associate Editor, European Journal of Operational Research (EJOR), 2001-2006.
- Editor, EURO Journal on Computational Optimization, 2012-.
- Member of the Editorial Board, Journal of Global Optimization, 2007-2013.

- Associate Editor, Mathematical Programming, 2022-.
- Member of the Editorial Board, MOS-SIAM Series on Optimization, 2014-2018.
- Member of the Editorial Board, Optimization Letters, 2006-2013.
- Member of the Editorial Board, Optimization Methods and Software, 2010-2018.
- Associate Editor, SIAM Journal on Optimization, 2009-2017.
- Editor, SIAG/Optimization Views-and-News, 2003-2008.
- Associate Editor, TOP, An Official Journal of the Spanish Society of Statistics and Operations Research, 2006-2013.
- Editor, Portugaliæ Mathematica, 2007-2012.
- Editor-in-Chief, Portugaliæ Mathematica, 2013-2018.
- Associate Editor, Portugaliæ Mathematica, 2019-2021.

8.3 Editor of Special Numbers and Newsletters

- Optimization and Engineering, Special Issue on Surrogate Optimization, Vol. 5 (2004).
- Editor, SIAG/Optimization Views-and-News, 2003-2008.
- Associate Editor, Portuguese Operations Research Journal, 2000-2009.

8.4 Boards and Committees (selected)

- Executive Board, Centro Internacional de Matemática, 2000-2004.
- SIAM Young Mathematician's 50th Anniversary Focus Committee, 2000-2002.
- Committee for the Award for Young Researchers in Continuous Optimization, Mathematical Optimization Society, 2002-2004.
- Director, Centre for Mathematics, University of Coimbra, 2005.
- Co-Director, Area of Mathematics, UT Austin | Portugal Program, 2008-2012.
- Space Trajectory Analysis Group, European Space Agency, 2007-2010.
- Scientific Council, Centro Internacional de Matemática, 2009-.
- Council Member-at-large, elected, Mathematical Optimization Society, 2009-2012.
- Nominating committee Office SIAM Activity Group on Optimization (SIAG/OPT) Fall 2010.
- Selection Committee, SIAM Activity Group on Optimization (SIAG/OPT) Prize, edition 2012-2014.
- Symposium Advisory Committee for ISMP 2018, Mathematical Optimization Society.

- Chair of the Executive Committee, Mathematical Optimization Society, 2015-2018.
- IBM Scientific Award Committee, editions 2015, 2016, 2017.
- Symposium Advisory Committee for ISMP 2021, Mathematical Optimization Society.
- Lecture Committee, Paul Y. Tseng Memorial Lectureship in Continuous Optimization Mathematical Optimization Society, edition 2018.
- Chair, Symposium Advisory Committee for ISMP 2024, Mathematical Optimization Society.
- Prize Committee, 2023 Egon Balas Prize, INFORMS.
- Chair, SIAM Activity Group on Optimization (SIAG/OPT)O Journal on Computational Optimization
- Social Chair, CIEADH, Council of Industrial Engineering Academic Department Heads, IISE, appointed, 2023-2024.
- President, ACORD, Association of Chairs of Operations Research Departments, INFORMS, elected, 2023-2025.

Academic Administrative Experience (selected):

- Director, Centre for Mathematics, University of Coimbra, 2005.
- Chair of the Graduate Committee, MS Program in Mathematics, University of Coimbra, 2007/2008.
- Chair of the Graduate Committee, MS Program in Quantitative Finance, University of Coimbra, 2007-2018 (except on sabbatical).
- Chair of the Graduate Committee, Joint UCoimbra|UPorto PhD Program in Mathematics, 2014-2015.
- Chair, Department of Industrial and Systems Engineering, Lehigh University, 2018 –.
- Chair of Lehigh's College of Engineering Working Group on Graduate Programs, Before, During, After COVID-19, 2020.
- Co-Chair of Lehigh's College of Engineering Working Group on Incentives for Master's Programs, 2021.
- Co-Chair of Lehigh's ATLSS director search, 2022/2023.

8.5 Refereeing

Annals of Operations Research. APDIO. Computational and Applied Mathematics. Computational Management Science. Computational Optimization and Applications. European Journal of Operational Research. 'High Performance Optimization Techniques 97' (Special Volume). IMA Journal of Numerical Analysis. Investigação Operacional. Investigación Operativa. Journal of

Applied Numerical Mathematics. Journal of Convex Analysis. Journal of Mathematical Analysis and Applications. Journal of Optimization Theory and Applications. Linear Algebra and Its Applications. Mathematics of Operations Research. Mathematical Programming (A, B, and C). Mathematical Reviews. Naval Research Logistics. Operations Research. Optimal Control, Applications and Methods Optimization. Optimization and Engineering. Optimization Methods and Software. Portugaliæ Mathematica. 4OR – Quarterly Journal of the Belgium, French and Italian Operation Research Societies. SIAM Book Series. SIAM Journal on Numerical Analysis. SIAM Journal on Optimization. SIAM Journal on Scientific Computing. SIAM Review.

8.6 Review of research grant proposals

Agence Nationale de la Recherche (ANR), France. Dutch Science Council (NWO). Fonds de la Recherche Scientifique, Belgium. MITACS, The Mathematics of Information Technology and Complex Systems, Network of Centres of Excellence, Canada. National Research Foundation, South Africa. National Science Foundation, USA. NSERC, the Natural Sciences and Engineering Research Council, Canada. Research Council of Norway. WWTF, the Vienna Science and Technology Fund. FWF, Austrian Science Fund.

8.7 Funding

- PI: Algorithms, Analysis and Software for Engineering Inverse Design Optimization Problems, 1997-1998, NATO Linkage Grant CRG 960945 (6370 EUR).
- Member: Numerical Linear Algebra and Optimization and Applications to Structural Engineering, Genetics, and Finance, 1996-1999, Science and Technology Portuguese Foundation, Praxis XXI 2/2.1/MAT/346/94 (PI: Joaquim J. Júdice).
- Member: Optimization in Physics, 1999-2000, Science and Technology Portuguese Foundation, Praxis/P/FIS/14195/1998 (PI: Orlando Oliveira).
- Member: Integrated Supervision and Real-Time Optimization of Chemical Processes, 1999-2000, Science and Technology Portuguese Foundation, Praxis/C/EQU/11239/1998 (PI: Nuno Oliveira).
- PI: Nonlinear Optimization, 2001-2004, Science and Technology Portuguese Foundation, POCTI 35059/99 (32422 EUR), 2 PhD members, Application Review: MB+ (4.5 from 1 to 5).
- PI: Continuous Constraints: Updating the Technology, 2000-2004, Future and Emerging Technologies (FET), European Union, IST-2000-26063 (266719 EUR), 1 PhD member, Application Review: Excellent (5 from 1 to 5).
- PI: Derivative-Free Optimization and Applications, 2005-2008, Science and Technology Portuguese Foundation, POCI/MAT/59442/2004 (23000 EUR), 2 PhD members, Application Review: Excellent (5 from 1 to 5).
- Member: Simulation and Optimization — Advanced Computing in Basic Research, 2004-2007, Science and Technology Portuguese Foundation, REEQ/628/FIS/2005 (PI: Carlos Fiolhais).

- PI: Computational Mathematical Finance, 2007-2010, Science and Technology Portuguese Foundation, PTDC/MAT/64838/2006 (69000 EUR), 3 PhD members, Application Review: Excellent (5 from 1 to 5).
- PI: Research Grant, co-directorship, Area of Mathematics, UT Austin | Portugal Program, 2008-2012 (167007 EUR).
- PI: Non-linear Programming Solver for Space Trajectory Optimization (eNLP Solver), 2008-2010, European Space Agency, GSTP-4 G603-45EC (134750 EUR), 2 PhD members.
- PI: Versatility of Filtering Techniques in Non-Linear Programming Optimization, 2009-2010, European Space Agency, RFQ/3-12584/08/NL/ST (42000 EUR), 3 PhD members.
- PI: Derivative-Free Optimization: Future Challenges and New Applications, 2010-2012, Science and Technology Portuguese Foundation, PTDC/MAT/098214/2008 (158256 EUR), 4 core PhD members, Application Review: 98 from 0 to 100.
- PI: Sparse and Smoothing Methods for Nonlinear Optimization of Complex Models, 2012-2014, Science and Technology Portuguese Foundation, PTDC/MAT/116736/2010 (78500 EUR), 3 PhD members, Application Review: Excellent (5 from 1 to 5).
- PI (within Univ. Coimbra): mobiOS – mobility Operating System, July 2012 – May 2013, QREN / Agéncia de Inovação, (29765 EUR), involving the companies Critical Software (main partner) and INTELI, 3 PhD members.
- Member of the Management Committee, Mathematical Optimization in the Decision Support Systems for Efficient and Robust Energy Networks, 2013-2017, European Union, COST TD1207.
- PI: Major FCT Grant for funding the Joint UC UP Program in Mathematics, Doctoral Programmes 2013 Call, PD/00018/2013 (approximately 2288800 EUR for 4 years).
- PI: Etude Mathématique d'Algorithmes d'Optimisation Globales Multi Niveaux utilisés sur des Plateformes Massivement Parallèles destinés à la Résolution de Problèmes Industriels, January 2016 – June 2017, CERFACS, Toulouse (30000 EUR).
- PI of the Optimization Group: MobiWise: From Mobile Sensing to Mobility Advising, January 2017 – December 2019, Science and Technology Portuguese Foundation (among others), (337949 EUR), 4 PhD members, Application Review: 4.9 from 1 to 5, for the overall project.
- co-PI: Program in the Foundations and Applications of Mathematical Optimization and Data Science, 2022–2024, Research Futures, Lehigh University (249950 USD), 12 PhD members.
- PI: Multi-Level Multi-Objective Stochastic Methods for Learning and Optimization, 2023–2025, AFOSR (503385 USD), 1 PhD member (the PI).
- PI: New Sampling and Descent Paradigms for Stochastic Black-Box Optimization, 2024–2026, ONR (478054 USD), 1 PhD member (the PI).

8.8 Meetings

- Chair of the organizing committee of Optimization 98, July 20-22, 1998.
- Organizer of The Contribution of Survey Engineering in the Context of the National Economy, April 28th, 1999.
- Organizer of the First Workshop on Nonlinear Optimization: "Interior-Point and Filter Methods", October 27-30, 1999.
- Organizer of the Second Debate on Mathematical Research in Portugal, April 1-2, 2000.
- Member of the organizing committee of Mathematical Webs, October 18-20, 2000.
- Member of the organizing committee of Optimization 2001, July 23-25, 2001.
- Co-chair of the National Meeting of the Portuguese Mathematical Society, February 5-8, 2002.
- Organizer of the Second Workshop on Nonlinear Optimization: "Theoretical Aspects of Surrogate Optimization", May 16-17, 2002.
- Member of the organizing committee of Optimization 2004, July 25-28, 2004.
- Member of the organizing committee of the Eighth SIAM Conference on Optimization, May 15-18, 2005.
- Organizer of the CIM Thematic Term on Optimization, Portugal, July 2005.
- Co-organizer of the Workshop on Optimization in Finance, CIM-Portugal, July 5-9, 2005.
- Co-organizer of the Workshop on Optimization in Medicine, CIM-Portugal, July 20-22, 2005.
- Co-organizer of the Third Workshop on Nonlinear Optimization / Workshop on PDE Constrained Optimization, CIM-Portugal, July 26-29, 2005.
- Co-organizer of the Industrial Workshop, LCM-CMUC, October 14-15, 2005.
- Chair of the program committee and member of the organizing committee of Optimization 2007, July 23-25, 2007.
- Co-organizer of the Workshop on Mathematics: Analysis, Modeling, Optimization and Simulation (MAMOS), Program UT Austin | Portugal, University of Texas at Austin, October 15-26, 2007.
- Co-organizer of the Follow-up Workshop on Optimization in Finance, CIM-Portugal, October 26-27, 2007.
- Co-organizer of the Summer Course and Workshop on Optimization in Machine Learning, Program UT Austin | Portugal, May 31–June 7, 2010.
- Chair of the program committee and member of the organizing committee of Optimization 2011, July 24-27, 2011.

- Member of the program committee of the 21st International Symposium on Mathematical Programming, August 19-24, 2012.
- Co-chair of the Cluster of Sessions on Derivative-Free and Simulated-Based Optimization, 21st International Symposium on Mathematical Programming, August 19-24, 2012.
- Chair of the program committee, 3rd Conference on Optimization Methods and Software, May 13-17, 2012.
- Chair of the organizing committee and member of the program committee, The Fourth International Conference on Continuous Optimization (ICCOPT) 2013, July 27–August 1, 2013.
- Member of the program committee of the 11th EUROPT Workshop on "Advances in Continuous Optimization", June 26-28, 2013.
- Member of the program committee of the EURO mini-Conference on Optimization in the Natural Sciences, February 5-9, 2014.
- Chair of the program committee and member of the organizing committee of Optimization 2014, July 28-30, 2014.
- Member of the program committee of the 2015 Joint International Meeting AMS-EMS-SPM, June 10-13, 2015.
- Member of the program committee of the EURO Mini Conference 2015 on Improving Healthcare: New Challenges, New Approaches, March 30–Abril 1, 2015.
- Co-chair of the Cluster of Sessions on Derivative-Free and Simulated-Based Optimization, 22nd International Symposium on Mathematical Programming, July 12-17, 2015.
- Chair of the program committee and member of the organizing committee of Optimization 2017, September 6-8, 2017.
- Member of the program committee, 4th Conference on Optimization Methods and Software, December 16-20, 2017.
- Member of the international scientific committee, 6th World Congress on Global Optimization, July 8-10, 2019.

9 Presentations and Lectures

9.1 Plenary and Invited Talks

- Workshop on Iterative Methods for Large Scale Nonlinear Problems, Logan, USA, September 1995.
- Mathematische Optimierung, Oberwolfach, Germany, January 1997.
- II Panamerican Workshop on Scientific Computing and Applied Mathematics, Gramado, Brazil, September 1997.

- Summer School of the Portuguese Mathematical Society, University of Aveiro, Portugal, September 1997.
- School of Finite Elements and Applications, Centro Internacional de Matemática, University of Coimbra, Portugal, September/October 1998.
- Semi-Plenary Talk, APDIO – National Meeting, Oporto, Portugal, April 2004.
- Plenary Talk, Workshop on Applied Optimization Challenges, Models, and Methods, Technische Universität Dresden, Germany, October 2004.
- Plenary Talk, Terceiro Workshop Anual de Engenharia de Processos e Sistemas, Department of Chemical Engineering, April 2005.
- Plenary Talk, SPM – National Meeting, Lisbon, Portugal, June 2006.
- Plenary Talk, Second International Workshop on Surrogate Modelling and Space Mapping for Engineering Optimization, Technical University of Denmark, Lyngby, Denmark, November 2006.
- Iberian Conference in Optimization, International Center for Mathematics, Coimbra, Portugal, November 2006.
- Plenary Talk, Workshop on New Problems and Innovative Methods in Nonlinear Optimization, International School of Mathematics "G. Stampacchia", Ettore Majorana Centre for Scientific Culture, Erice, Italy, August 2007.
- Plenary Talk, 13th French-German-Czech Conference on Optimization, University of Heidelberg, Germany, September 2007.
- Workshop on Mathematics: Analysis, Modeling, Optimization and Simulation (MAMOS), UT Austin | Portugal Program, University of Texas at Austin, October 2007.
- Invited Minitutorial, Ninth SIAM Conference on Optimization, Boston, USA, May 2008.
- Plenary Talk, Fifth Workshop on Continuous Optimization, Campinas State University, Brazil, July 2008.
- Invited Tutorial, Graduate School in Systems, Optimization, Control and Networks (SOCN), K. U. Leuven, Leuven, Belgium, November and December 2008.
- 1st Porto Meeting on Mathematics for Industry, Porto, April 2009.
- RTRA STAE Workshop on Advances Methods and Perspectives in Nonlinear Optimization and Control Toulouse, France, February 2010.
- Plenary Talk, 8th EUROPT Workshop on "Advances in Continuous Optimization", Aveiro, Portugal, July 2010.
- Plenary Talk, The Third International Conference on Continuous Optimization (ICCOPT), Santiago, Chile, July 2010.

- Plenary Talk, Weekend on Numerical Optimization, Campinas State University, Brazil, July/August 2010.
- Plenary Talk, Workshop Investigação Operacional na Robótica, Coimbra, Portugal, March 2011.
- Plenary Talk, Journées de l'Optimisation / Optimization Days, Montréal, Canada, May 2011.
- Workshop on Optimization and Learning: Theory, Algorithms and Applications, Université Paul Verlaine, Metz, France, May 2011.
- Plenary Talk, The 5th Sino-Japanese Optimization Meeting, Beijing, China, September 2011.
- Keynote Speaker, Workshop on Design Optimization, ABB Corporate Research, Basel, Switzerland, November 2011.
- Plenary Talk, 3rd Conference on Optimization Methods and Software, Chania, Greece, May 2012.
- Plenary Talk, 43rd Annual Conference of the Italian Operational Research Society, Vietri sul Mare, Italy, September 2012.
- Plenary Talk, LANCS International Workshop on Discrete and Nonlinear Optimisation, University of Cardiff, UK, May 2013.
- Plenary Talk, The Third European Conference on Computational Optimization (EUCCO) 2013, Chemnitz University of Technology, Germany, July 2013.
- Plenary Talk, International Conference on Recent Advances on Optimization, RTRA-STAE, CERFACS, Toulouse, France, July 2013.
- Invited Tutorial, Graduate School in Systems, Optimization, Control and Networks (SOCN), Université Catholique de Louvain, Louvain-la-Neuve, Belgium, August 2013.
- Plenary Talk, 26th IFIP TC7 Conference 2013 on System Modelling and Optimization, Alpen-Adria University in Klagenfurt, Germany, September 2013.
- Plenary Talk, 5th Iberian Mathematical Meeting, Aveiro, Portugal, October 2014.
- Plenary Talk, Journées Annuelles 2014 du GdR MOA (CNRS), Université de Limoges, France, December 2014.
- Plenary Talk, Second Seville Workshop on MINLP, Universidad de Sevilla, Spain, March 2015.
- Sparse Days in St Girons III, CIMI, Saint Girons, France, June/July 2015.
- Plenary Talk, 15th MOPTA – Modeling and Optimization: Theory and Applications, Lehigh University, USA, July 2015.
- Main Invited Talk, Workshop on Advances in Optimization with Application to Data Assimilation, CIMI semester on High Performance Linear and Nonlinear Methods for Large Scale Applications, CERFACS, France, January 2016.

- Workshop on Nonlinear Optimization Algorithms and Industrial Applications, The Fields Institute, Toronto, Canada, June 2016.
- Workshop I: Optimization and Optimal Control for Complex Energy and Property Landscapes, Institute for Pure & Applied Mathematics (IPAM) at UCLA, October 2017.
- Invited Tutorial, Vienna Graduate School on Computational Optimization, Univ. Vienna and TU Wien, Austria, November/December 2017.
- Workshop on Topics in Applied Analysis and Optimisation, CIM / Weierstrass Institute for Applied Analysis and Stochastics, University of Lisbon, Portugal, December 2017.
- Plenary/Opening Talk, Les Journées SMAI-MODE (Mathématiques de l'Optimisation et de la Decision, Société de Mathématiques Appliquées et Industrielles), Autrans, France, March 2018.
- Plenary Talk, 6th IMA Conference on Numerical Linear Algebra and Optimization, University of Birmingham, UK, June 2018.
- Keynote Talk, 23rd International Symposium on Mathematical Programming, Bordeaux, France, July 2018.
- Plenary Talk, 32nd Brazilian Mathematics Colloquium, IMPA, Rio de Janeiro, Brazil, August 2019.
- Closing Plenary Talk, 21st ECMI2021 European Conference on Industrial and Applied Mathematics, Bergische Univ. Wuppertal, Germany, April 2021.
- Lecture, 2023 Gene Golub SIAM Summer School on Quantum Computing and Optimization, Lehigh University, August 2023.
- Invited Tutorial, Dipartimento di Matematica "Tullio Levi-Civita", Università degli Studi di Padova, Italy, December 2023.

9.2 Invited Talks at Minisymposia and Special Sessions

- Optimization Days, Montreal, Canada, May 1992.
- Optimization Days, Montreal, Canada, May 1993.
- IFORS93, Lisbon, Portugal, July 1993.
- 15th International Symposium on Mathematical Programming, Ann Arbor, USA, August 1994.
- 1995 SIAM Annual Meeting, Charlotte, USA, October 1995.
- Fifth SIAM Conference on Optimization, Victoria, Canada, May 1995.
- 16th International Symposium on Mathematical Programming, Genève, Switzerland, August 1997.

- ProfMat 97, Figueira da Foz, Portugal, November 1997.
- Optimization 98, Coimbra, Portugal, July 1998.
- John E. Dennis - Richard A. Tapia Day, Sixth SIAM Conference on Optimization, Atlanta, USA, May 1999.
- Fast Solution of Discretized Optimization Problems, WIAS, Berlin, Germany, May 2000.
- 17th International Symposium on Mathematical Programming, Atlanta, USA, August 2000.
- Optimization 2001, Aveiro, Portugal, July 2001.
- Optimization 2001, Aveiro, Portugal, July 2001.
- Seventh SIAM Conference on Optimization, Toronto, Canada, May 2002.
- 18th International Symposium on Mathematical Programming, Lyngby, Denmark, August 2003.
- Eighth SIAM Conference on Optimization, Stockholm, Sweden, May 2005.
- Workshop on Computational Mathematics, Centre for Mathematics, University of Coimbra, February 2007.
- Journées de l'Optimisation / Optimization Days, Montréal, Canada, May 2011.
- Tenth SIAM Conference on Optimization, Darmstadt, Germany, May 2011.
- Invited Tutorials, Departmento de Estadística e Investigación Operativa, Universidad Rey Juan Carlos, Madrid, Spain, April 2011 and March 2012.
- 21st International Symposium on Mathematical Programming, Berlin, Germany, August 2012.
- 11th EUROPT Workshop on "Advances in Continuous Optimization", Florence, Italy, June 2013.
- "Optimization, Control and Applications in the Information Age", organized in honor of the 60th birthday of Professor Panos Pardalos Porto Carras, Greece, June 2014.
- Foundations of Computational Mathematics (FoCM), Universitat de Barcelona, Spain, July 2017.
- INFORMS 2018 Annual Meeting, Phoenix, USA, November 2018.
- INFORMS 2019 Annual Meeting, Seattle, USA, October 2019.
- INFORMS 2020 Annual Meeting, virtual, USA, October 2020.
- 18th EUROPT Workshop on "Advances in Continuous Optimization", Toulouse, France, June 2021.
- LION16, The 16th Learning and Intelligent Optimization Conference, Milos, Greece, June 2022.

- ICCOPT 2022, Lehigh University, Bethlehem, USA, July 2022.
- INFORMS 2022 Annual Meeting, Indianapolis, USA, October 2022.
- 12th US-Mexico Workshop on Optimization and Its Applications, Huatulco, Mexico, January 2023.
- 2023 SIAM Conference on Optimization, Seattle, USA, June 2023.
- 2023 World Congress on Global Optimization, Athens, Greece, July 2023.
- 2023 Mathematical Optimization Program Review, Arlington, September 2023.
- INFORMS 2023 Annual Meeting, Phoenix, USA, October 2023.

9.3 Contributed Talks

Not shown to keep the CV short.

9.4 Seminars in Universities and Research Centers

- Engineering Optimization Group, University of Waterloo, Canada, December 1992.
- Interdisciplinary Center for Applied Mathematics, Virginia Polytechnic Institute and State University, USA, March 1995.
- GERAD, École Polytechnique de Montréal, Canada, April 1996.
- GERAD, École Polytechnique de Montréal, Canada, May 1996.
- Mathematical Sciences Department, IBM T. J. Watson Research Center, USA, July 1996.
- University of Trier, Department of Mathematics, Germany, November 1996.
- Pontifícia Universidade Católica, Porto Alegre, Brasil, September 1997.
- Centre for Computational Physics, University of Coimbra, Portugal, December 1998.
- Departamento de Estadística y Econometría, Universidad Carlos III de Madrid, Spain, February 1999.
- Telecommunications Institute, Coimbra, Portugal, September 2000.
- University of Coimbra – Calouste Gulbenkian Foundation, Portugal, March 2001.
- Departament of Mathematics, Technical University of Lisbon, Portugal, April 2001.
- Centre for Computational Physics, University of Coimbra, Portugal, December 2000.
- Institut für Mathematik, Universität Graz, Austria, July 2002.
- Department of Mathematical Sciences, Carnegie Mellon University, USA, October 2002.
- Center for Nonlinear Analysis, Carnegie Mellon University, USA, October 2002.

- Sandia National Laboratories, Albuquerque, USA, November 2002.
- Department of Mathematics, Simon Fraser University, Canada, November 2002.
- Institute for Mathematics and its Applications, Minneapolis, USA, January 2003.
- Institute for Mathematics and its Applications, Minneapolis, USA, February 2003.
- Institute for Mathematics and its Applications, Minneapolis, USA, March 2003.
- Courant Institute of Mathematical Sciences, New York University, New York, USA, April 2003.
- Department of Operations Research & Financial Engineering, Princeton University, Princeton, USA, May 2003.
- Département de Mathématique, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, July 2003.
- Department of Mathematics, University of Aveiro, Portugal, November 2003.
- Department of Industrial Engineering, Boğaziçi University, Istanbul, Turkey, July 2005.
- Department of Computational and Applied Mathematics, Rice University, Houston, USA, October 2007.
- Department of Physics, University of Coimbra, March 2008.
- OPTEC, K. U. Leuven, Leuven, Belgium, November 2008.
- CERFACS, Toulouse, France, January 2009.
- LITA, Université Paul Verlaine, Metz, France, May 2009.
- Courant Institute of Mathematical Sciences, New York University, New York, USA, October 2009.
- Department of Computational and Applied Mathematics, Rice University, Houston, USA, February 2010.
- School of Operations Research and Information Engineering, Cornell University, Ithaca, USA, March 2010.
- CERFACS, Toulouse, France, July 2010.
- Computer Science Department, University of Coimbra, Portugal, December 2011.
- Edinburgh Research Group in Optimization, School of Mathematics, University of Edinburgh, March 2012.
- Edinburgh Compressed Sensing Seminars, University of Edinburgh, March 2012.
- Computational Mathematics and Applications Seminars, University of Oxford, January 2014.

- Séminaire Pluridisciplinaire d'Optimisation de Toulouse (SPOT), ENSEEIHT, Institut National Polytechnique de Toulouse, June 2015.
- Department of Information Engineering, Universita degli Studi di Firenze, Italy, April 2016.
- Department of Computer, Control, and Management Engineering, Sapienza Università di Roma, Italy, June 24, 2016.
- Department of Computer, Control, and Management Engineering, Sapienza Università di Roma, Italy, June 27, 2016.
- Department of Computer, Control, and Management Engineering, Sapienza Università di Roma, Italy, June 28, 2016.
- Department of Computational and Applied Mathematics, Rice University, Houston, USA, August 2016.
- Scientific Computing Seminar, Department of Mathematics, University of Houston, USA, September 2016.
- Courant Institute of Mathematical Sciences, New York University, New York, USA, April 2017.
- DFTE, Universidade Federal do Rio Grande do Norte, Brazil, December 2017.
- ISE Department, Lehigh University, USA, January 2018.
- Department of Mathematics, Lehigh University, USA, September 2019.
- Department of Industrial Engineering, University of Pittsburgh, USA, November 2019.
- Department of Industrial Engineering, University of Minnesota, Minneapolis, USA, November 2020.
- Department of Mathematics, University of Coimbra, Portugal, February 2021.
- Department of Industrial and Systems Engineering, University of Tennessee, Knoxville, November 2023.
- Dipartimento di Matematica "Tullio Levi-Civita", Università degli Studi di Padova, Italy, December 2023.

10 Publications

10.1 Books

- A. R. Conn, K. Scheinberg, and **L. N. Vicente**, Introduction to Derivative-Free Optimization, MPS/SIAM Book Series on Optimization, SIAM, Philadelphia, 2009.

10.2 Edited Books and Volumes

- C. Audet, J. E. Dennis, and **L. N. Vicente** (editors), Special Issue on Surrogate Optimization, Optimization and Engineering, Vol. 5 (2004) 99-100.
- C. J. S. Alves, P. Pardalos, and **L. N. Vicente** (editors), Optimization in Medicine, Centro Internacional de Matemática, Optimization and Its Applications, Springer, New York, 2008.
- J. M. Martínez and **L. N. Vicente** (editors), Special issue on nonlinear and global optimization, dedicated to Professor Joaquim João Júdice on the occasion of his sixtieth anniversary, **TOP**, Vol. 20, Num. 1 (2012).

10.3 Articles in Refereed Journals and Special Volumes

1. **L. N. Vicente**, Efficient vehicle routing algorithms for municipal waste collection (written in portuguese), Investigação Operacional, 10 (1991) 47-58.
2. **L. N. Vicente**, P. H. Calamai, and J. J. Júdice, Generation of disjointly constrained bilinear programming test problems, Computational Optimization and Applications, 1 (1992) 299-306.
3. P. H. Calamai and **L. N. Vicente**, Generating linear and linear-quadratic bilevel programming problems, SIAM Journal on Scientific Computing, 14 (1993) 770-782.
4. P. H. Calamai, **L. N. Vicente**, and J. J. Júdice, A new technique for generating quadratic programming test problems, Mathematical Programming, 61 (1993) 215-231.
5. **L. N. Vicente**, J. J. Júdice, and P. M. Pardalos, Parametric linear programming techniques for the indefinite quadratic programming problem, IMA Journal of Mathematics Applied in Business and Industry, 4 (1993) 343-349.
6. P. H. Calamai and **L. N. Vicente**, Generating quadratic bilevel programming test problems, ACM Transactions on Mathematical Software, 20 (1994) 103-119.
7. P. H. Calamai and **L. N. Vicente**, Algorithm 728: FORTRAN subroutines for generating quadratic bilevel programming test problems, ACM Transactions on Mathematical Software, 20 (1994) 120-123, ACM Transactions on Mathematical Software, Collected Algorithms from ACM, Supplement 129, (1994) 1870 lines of code.
8. J. J. Júdice and **L. N. Vicente**, On the solution and complexity of a generalized linear complementarity problem, Journal of Global Optimization, 4 (1994) 415-424.
9. **L. N. Vicente** and P. H. Calamai, Bilevel and multilevel programming: a bibliography review, Journal of Global Optimization, 5 (1994) 291-306.
10. **L. N. Vicente**, G. Savard, and J. J. Júdice, Descent approaches for quadratic bilevel programming, Journal of Optimization Theory and Applications, 81 (1994) 379-399.
11. L. F. Portugal, J. J. Júdice, and **L. N. Vicente**, A comparison of block pivoting and interior-point algorithms for linear least squares problems with nonnegative variables, Mathematics of Computation, 63 (1994) 625-643.

12. **L. N. Vicente** and P. H. Calamai, Geometry and local optimality conditions for bilevel programs with quadratic strictly convex lower levels, Bookseries Nonconvex Optimization and Its Applications, Minimax and Applications, ed. by D.-Z. Du and P. M. Pardalos, vol. 4, pp. 141-151, Kluwer Academic Publishers, Dordrecht, 1995.

13. **L. N. Vicente**, G. Savard, and J. J. Júdice, Discrete linear bilevel programming problem, Journal of Optimization Theory and Applications, 89 (1996) 597-614.

14. J. E. Dennis and **L. N. Vicente**, Trust-region interior-point algorithms for minimization problems with simple bounds, Applied Mathematics and Parallel Computing, Festschrift for Klaus Ritter, ed. by H. Fisher, B. Riedmüller, and S. Schäffler, pp. 97-107, Physica-Verlag, Springer-Verlag, Berlin, 1996.

15. **L. N. Vicente**, A comparison between line searches and trust regions for nonlinear optimization, Investigação Operacional, 16 (1996) 173-179.

16. J. E. Dennis and **L. N. Vicente**, On the convergence theory of trust-region-based algorithms for equality constrained optimization, SIAM Journal on Optimization, 7 (1997) 927-950.

17. J. E. Dennis, M. Heinkenschloss, and **L. N. Vicente**, Trust-region interior-point SQP algorithms for for a class of nonlinear programming problems, SIAM Journal on Control and Optimization, 36 (1998) 1750-1794.

18. **L. N. Vicente**, On interior-point Newton algorithms for discretized optimal control problems with state constraints, Optimization Methods & Software, 8 (1998) 249-275.

19. M. M. Freire, **L. N. Vicente**, and H. J. A. da Silva, Nonlinear least squares estimation of MQW laser parameters from IM response measurements, Proceedings of the Meeting on Applied Mathematics to Telecommunications, ed. by J. J. Júdice and M. C. Gouveia, pp. 30-35, Telecommunications Institute, September 28-29, 1998.

20. **L. N. Vicente**, A. L. Topa, C. R. Paiva, and A. M. Barbosa, Application of the least squares boundary residual method to the study of step discontinuities in dielectric planar waveguides, Proceedings of the Meeting on Applied Mathematics to Telecommunications, ed. by J. J. Júdice and M. C. Gouveia, pp. 99-108, Telecommunications Institute, September 28-29, 1998.

21. A. R. Conn, **L. N. Vicente**, and C. Visweswariah, Two-step algorithms for nonlinear optimization with structured applications, SIAM Journal on Optimization, 9 (1999) 924-947.

22. M. Heinkenschloss and **L. N. Vicente**, An interface between optimization and application for the numerical solution of optimal control problems, ACM Transactions on Mathematical Software, 25 (1999) 157-190.

23. D. Andrews and **L. N. Vicente**, Characterization of the smoothness and curvature of a marginal function for a trust-region problem, Mathematical Programming, 84 (1999) 123-135.

24. **L. N. Vicente**, An analysis of Newton's method for equivalent Karush-Kuhn-Tucker systems, Investigación Operativa, 7 (1999) 17-28.

25. **L. N. Vicente**, Local convergence of the affine-scaling interior-point algorithm for nonlinear programming, Computational Optimization and Applications, 17 (2000) 23-35.

26. **L. N. Vicente**, Bilevel programming: Introduction, history, and overview, Encyclopedia of Optimization, ed. by C. A. Floudas and P. M. Pardalos, vol. 1, pp. 178-180, Kluwer Academic Publishers, Dordrecht, 2001.

27. P. Alberto, F. Nogueira, H. Rocha, and **L. N. Vicente**, Pattern search methods for user-provided points, Lecture Notes in Computer Science, Computacional Science – ICCS 2001, ed. by V. N. Alexandrov *et al*, vol. 2074, pp. 95-98, Springer-Verlag, Berlin, 2001.

28. M. Heinkenschloss and **L. N. Vicente**, Analysis of inexact trust-region SQP algorithms, SIAM Journal on Optimization, 12 (2001) 283-302.

29. **L. N. Vicente** and S. J. Wright, Local convergence of a primal-dual method for degenerate nonlinear programming, Computational Optimization and Applications, 22 (2002) 311-328.

30. **L. N. Vicente**, Local analysis of a new multipliers method, European Journal of Operational Research, 143 (2002) 432-451 (Feature Issue: Interior Point Methods).

31. **L. N. Vicente**, Space mapping: models, sensitivities, and trust-regions methods, Optimization and Engineering, 4 (2003) 159-175.

32. C. P. Avelino and **L. N. Vicente**, Updating the multipliers associated with inequality constraints in an augmented Lagrangian multiplier method, Journal of Optimization Theory and Applications, 119 (2003) 215-233.

33. E. M. E. Mostafa, **L. N. Vicente**, and S. J. Wright, Numerical behavior of a stabilized SQP method for degenerate NLP problems, Lecture Notes in Computer Science, Global Optimization and Constraint Satisfaction, ed. by C. Bliek, C. Jermann, and A. Neumaier, vol. 2861, pp. 123-141, Springer-Verlag, Berlin, 2003.

34. M. Ulbrich, S. Ulbrich, and **L. N. Vicente**, A globally convergent primal-dual interior-point filter method for nonlinear programming, Mathematical Programming, 100 (2004) 379-410.

35. P. Alberto, F. Nogueira, H. Rocha, and **L. N. Vicente**, Pattern search methods for user-provided points: Application to molecular geometry problems, SIAM Journal on Optimization, 14 (2004) 1216-1236.

36. M. Hintermüller and **L. N. Vicente**, Space mapping for optimal control of partial differential equations, SIAM Journal on Optimization, 15 (2005) 1002-1025.

37. J. Fliege and **L. N. Vicente**, A multicriteria approach to bilevel optimization, Journal of Optimization Theory and Applications, 131 (2006) 209-225.

38. A. L. Custódio and **L. N. Vicente**, Using sampling and simplex derivatives in pattern search methods, SIAM Journal on Optimization, 18 (2007) 537-555.

39. A. I. F. Vaz and **L. N. Vicente**, A particle swarm pattern search method for bound constrained global optimization, Journal of Global Optimization, 39 (2007) 197-219.

40. A. R. Conn, K. Scheinberg, and **L. N. Vicente**, Geometry of interpolation sets in derivative free optimization, Mathematical Programming, 111 (2008) 141-172.

41. A. M. Monteiro, R. H. Tütüncü, and **L. N. Vicente**, Recovering risk-neutral probability density functions from options prices using cubic splines and ensuring nonnegativity, European Journal of Operational Research, 187 (2008) 525-542.

42. R. Silva, J. Soares, and **L. N. Vicente**, Local analysis of the feasible primal-dual interior-point method, Computational Optimization and Applications, 40 (2008) 41-57.

43. A. L. Custódio, J. E. Dennis Jr., and **L. N. Vicente**, Using simplex gradients of nonsmooth functions in direct search methods, IMA Journal of Numerical Analysis, 28 (2008) 770-784.

44. A. R. Conn, K. Scheinberg, and **L. N. Vicente**, Geometry of sample sets in derivative free optimization: Polynomial regression and underdetermined interpolation, IMA Journal of Numerical Analysis, 28 (2008) 721-748.

45. A. R. Conn, K. Scheinberg, and **L. N. Vicente**, Global convergence of general derivative-free trust-region algorithms to first and second order critical points, SIAM Journal on Optimization, 20 (2009) 387-415.

46. **L. N. Vicente**, Implicitly and densely discrete black-box optimization problems, Optimization Letters, 3 (2009) 475-482.

47. A. I. F. Vaz and **L. N. Vicente**, PSwarm: A hybrid solver for linearly constrained global derivative-free optimization, Optimization Methods and Software, 25 (2009) 669-685.

48. A. L. Custódio, H. Rocha, and **L. N. Vicente**, Incorporating minimum Frobenius norm models in direct search, Computational Optimization and Applications, 46 (2010) 265-278.

49. A. L. Custódio, J. F. A. Madeira, A. I. F. Vaz, and **L. N. Vicente**, Direct multisearch for multiobjective optimization, SIAM Journal on Optimization, 21 (2011) 1109-1140.

50. A. M. Monteiro, R. H. Tütüncü, and **L. N. Vicente**, Dynamic evolution for risk-neutral densities, Computational Management Science, 8 (2011) 387-414.

51. J. M. Fernandes, A. I. F. Vaz, and **L. N. Vicente**, Modelling nearby FGK Population I stars: A new form of estimating stellar parameters using an optimization approach, Astronomy & Astrophysics, 532 (2011) A20-A29.

52. **L. N. Vicente** and A. L. Custodio, Analysis of direct searches for discontinuous functions, Mathematical Programming, 133 (2012) 299-325.

53. A. R. Conn and **L. N. Vicente**, Bilevel derivative-free optimization and its application to robust optimization, Optimization Methods and Software, 27 (2012) 561-577.

54. Le Thi Hoai An, A. I. F. Vaz, and **L. N. Vicente**, Optimizing radial basis functions by D.C. programming and its use in direct search for global derivative-free optimization, TOP, 20 (2012) 190-214.

55. A. S. Bandeira, K. Scheinberg, and **L. N. Vicente**, Computation of sparse low degree interpolating polynomials and their application to derivative-free optimization, Mathematical Programming, 134 (2012) 223-257.

56. J. M. Fernandes, A. I. F. Vaz, and **L. N. Vicente**, Modeling binary stars: age, helium abundance, and convection parameters, Monthly Notices of the Royal Astronomical Society, 425 (2012) 3104-3111.

57. M. Li and **L. N. Vicente**, Inexact solution of NLP subproblems in MINLP, Journal of Global Optimization, 55 (2013) 877-899.

58. **L. N. Vicente**, Worst case complexity of direct search, EURO Journal on Computational Optimization, 1 (2013) 143-153.

59. R. Garmanjani and **L. N. Vicente**, Smoothing and worst-case complexity for direct-search methods in nonsmooth optimization, IMA Journal of Numerical Analysis, 33 (2013) 1008-1028.

60. S. Gratton and **L. N. Vicente**, A surrogate management framework using rigorous trust-region steps, Optimization Methods and Software, 29 (2014) 10-23.

61. Le Thi Hoai An, Huynh Van Ngai, Pham Dinh Tao, A. I. F. Vaz, and **L. N. Vicente**, Globally convergent DC trust-region methods, Journal of Global Optimization, 59 (2014) 209-225.

62. R. P. Brito and **L. N. Vicente**, Efficient cardinality/mean-variance portfolios, Springer series IFIP Advances in Information and Communication Technology, System Modeling and Optimization, ed. by C. Pötzsche, C. Heuberger, B. Kaltenbacher, and F. Rendl, Springer-Verlag, Berlin, 2014.

63. A. S. Bandeira, K. Scheinberg, and **L. N. Vicente**, Convergence of trust-region methods based on probabilistic models, SIAM Journal on Optimization, 24 (2014) 1238-1264.

64. S. Gratton and **L. N. Vicente**, A merit function approach for direct search, SIAM Journal on Optimization, 24 (2014) 1980-1998.

65. Y. Diouane, S. Gratton, and **L. N. Vicente**, Globally convergent evolution strategies, Mathematical Programming, 152 (2015) 467-490.

66. Y. Diouane, S. Gratton, and **L. N. Vicente**, Globally convergent evolution strategies for constrained optimization, Computational Optimization and Applications, 62 (2015) 323-346.

67. S. Gratton, C. W. Royer, **L. N. Vicente**, and Z. Zhang, Direct search based on probabilistic descent, SIAM Journal on Optimization, 25 (2015) 1515-1541.

68. M. Dodangeh and **L. N. Vicente**, Worst case complexity of direct search under convexity, Mathematical Programming, 155 (2016) 307-332.

69. Y. Diouane, S. Gratton, X. Vasseur, **L. N. Vicente**, and H. Calandra, A parallel evolution strategy for an earth imaging problem in geophysics, Optimization and Engineering, 17 (2016) 3-26.

70. S. Gratton, C. W. Royer, and **L. N. Vicente**, A second-order globally convergent direct-search method and its worst-case complexity, Optimization, 65 (2016) 1105-1128.

71. M. Dodangeh, **L. N. Vicente**, and Z. Zhang, On the optimal order of worst case complexity of direct search, Optimization Letters, 10 (2016) 699-708.

72. E. Bergou, S. Gratton, and **L. N. Vicente**, Levenberg-Marquardt methods based on probabilistic gradient models and inexact subproblem solution, SIAM/ASA Journal on Uncertainty Quantification, 4 (2016) 924-951.

73. R. Garmanjani, D. Júdice, and **L. N. Vicente**, Trust-region methods without using derivatives: Worst case complexity and the non-smooth case, SIAM Journal on Optimization, 26 (2016) 1987-2011.

74. A. L. Custódio, K. Scheinberg, and **L. N. Vicente**, Methodologies and software for derivative-free optimization, Chapter 37 of Advances and Trends in Optimization with Engineering Applications, T. Terlaky, M. F. Anjos, and S. Ahmed (editors), MOS-SIAM Book Series on Optimization, SIAM, Philadelphia, 2017.

75. F. Ceccarelli, M. Sciandrone, C. Perricone, G. Galvan, F. Morelli, **L. N. Vicente**, I. Leccese, L. Massaro, E. Cipriano, F. R. Spinelli, C. Alessandri, G. Valesini, and F. Conti, Prediction of chronic damage in systemic lupus erythematosus by using machine learning models, PLoS ONE 12(3), March 2017.

76. S. Gratton, N. Soualmi, and **L. N. Vicente**, An indicator for the switch from derivative-free to derivative-based optimization, Operations Research Letters, 45 (2017) 353-361.

77. S. Gratton, C. W. Royer, **L. N. Vicente**, and Z. Zhang, Complexity and global rates of trust-region methods based on probabilistic models, IMA Journal of Numerical Analysis, 38 (2018) 1579-1597.

78. S. Pereira, A. I. F. Vaz, and **L. N. Vicente**, On the optimal object orientation in additive manufacturing, The International Journal of Advanced Manufacturing Technology, 98 (2018) 1685-1694

79. S. Gratton, C. W. Royer, **L. N. Vicente**, and Z. Zhang, Direct search based on probabilistic feasible descent for bound and linearly constrained problems, Computational Optimization and Applications, 72 (2019) 525-559.

80. J. Fliege, A. I. F. Vaz, and **L. N. Vicente**, Complexity of gradient descent for multiobjective optimization, Optimization Methods and Software, 34 (2019) 949-959.

81. G. Liuzzi, S. Lucidi, F. Rinaldi, and **L. N. Vicente**, Trust-region methods for the derivative-free optimization of nonsmooth black-box functions, SIAM Journal on Optimization, 29 (2019) 3012-3035.

82. S. Gratton, C. W. Royer, and **L. N. Vicente**, A decoupled first/second-order steps technique for nonconvex nonlinear unconstrained optimization with improved complexity bounds, Mathematical Programming, 179 (2020) 195-222.

83. L. Song and **L. N. Vicente**, Modeling Hessian-vector products in nonlinear optimization: New Hessian-free methods, IMA Journal of Numerical Analysis, 42 (2022) 1766-1788.

84. B. Ramos, D. Pinho, D. Martins, A. I. F. Vaz, and **L. N. Vicente**, Optimal 3D printing of complex objects in a 5-axis printer, Optimization and Engineering, 23 (2022) 1085-1116.

85. S. Liu and **L. N. Vicente**, Accuracy and fairness trade-offs in machine learning: A stochastic multi-objective approach, Computational Management Science, 19 (2022) 513-537.

86. S. Liu and L. N. Vicente, A stochastic alternating balance k-means algorithm for fair clustering, Lecture Notes in Computer Science, Learning and Intelligent Optimization, ed. by D. E. Simos et al., vol. 13691, pp. 77-92, Springer, Cham, Switzerland, 2022.

87. A. S. Berahas, O. Sohab, and **L. N. Vicente**, Full-low evaluation methods for derivative-free optimization, Optimization Methods and Software, 38 (2023) 386-411.

88. S. Liu and **L. N. Vicente**, The stochastic multi-gradient algorithm for multi-objective optimization and its application to supervised machine learning, to appear in Annals of Operations Research.

89. T. Giovannelli and **L. N. Vicente**, An integrated assignment, routing, and speed model for roadway mobility and transportation with environmental, efficiency, and service goals, to appear in Transportation Research Part C: Emerging Technologies.

90. S. Liu and **L. N. Vicente**, Convergence rates of the stochastic alternating algorithm for bi-objective optimization, to appear in Journal of Optimization Theory and Applications.

91. T. Giovannelli, G. Kent, and **L. N. Vicente**, Bilevel optimization with a multi-objective lower-level problem: Risk-neutral and risk-averse formulations, to appear in Optimization Methods and Software.

92. F. Rinaldi, **L. N. Vicente**, and D. Zeffiro, Stochastic trust-region and direct-search methods: A weak tail bound condition and reduced sample sizing, to appear in SIAM Journal on Optimization.

10.4 Papers Submitted for Publication

- T. Giovannelli, G. Kent, and **L. N. Vicente**, Inexact bilevel stochastic gradient methods for constrained and unconstrained lower-level problems, ISE Technical Report 21T-025, Lehigh University.

- C. W. Royer, O. Sohab, and **L. N. Vicente**, Full-low evaluation methods for bound and linearly constrained derivative-free optimization, ISE Technical Report 23T-025, Lehigh University.

- T. Giovannelli, O. Sohab, and L. N. Vicente, The limitation of neural nets for approximation and optimization, ISE Technical Report 23T-027, Lehigh University.

- L. N. Vicente, T. N. Alleck, T. Giovannelli, R. Mitchell, and O. Remen, Why is soccer so popular: Understanding underdog achievement and randomness in team ball sports, ISE Technical Report 24T-004, Lehigh University.

- T. N. Alleck, L. N. Vicente, T. Giovannelli, R. Mitchell, and O. Remen, Match score dataset for team ball sports, ISE Technical Report 24T-003, Lehigh University.

10.5 Theses

- **L. N. Vicente**, Bilevel Programming (written in portuguese), M.S. Thesis, University of Coimbra, 1992.

- **L. N. Vicente**, Trust-Region Interior-Point Algorithms for a Class of Nonlinear Programming Problems, Ph.D. Thesis, Dept. of Computational and Applied Mathematics, Rice University, March 1996. Technical Report TR96-05.

10.6 Technical Reports and Other Papers

- **L. N. Vicente**, Trust-Region Interior-Point Algorithms for Optimization Problems with Equality Constraints and Simple Bounds, Thesis Proposal, Department of Computational and Applied Mathematics, Rice University, November 1994.

- J. E. Dennis and **L. N. Vicente**, Portuguese OR Society Sponsors Optimization '95, SIAM News, vol. 28, num. 10 (December 1995) pp. 9.

- **L. N. Vicente**, Métodos de optimização para controlo óptimo e projecto de engenharia, Proceedings of the First National Conference on Telecomunications, Aveiro, Portugal, April 1997.

- **L. N. Vicente**, Derivative computations for a class of optimal control problems, School of Finite Elements and Applications, Centro Internacional de Matemática, (ed. by I. N. Figueiredo), n. 6, Coimbra, September 1998.

- R. Silva, M. Ulbrich, S. Ulbrich, and **L. N. Vicente**, A globally convergent primal-dual interior-point filter method for nonlinear programming: new filter optimality measures and computational results, preprint 08-49, Dept. Mathematics, Univ. Coimbra.

- A. S. Bandeira, K. Scheinberg, and **L. N. Vicente**, On partially sparse recovery, preprint 11-13, Dept. Mathematics, Univ. Coimbra.

- S. Liu and **L. N. Vicente**, The Sharpe predictor for fairness in machine learning, ISE Technical Report 21T-019, Lehigh University.