Curriculum Vitae

Dr. Dario Landa-Silva

Associate Professor in Computer Science

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Member of the INFORMS Professional Society

Fellow of the Higher Education Academy

Research and Teaching Interests

Scientific research at the interface between computer science, operations research and artificial intelligence for the application of modelling, search and optimization techniques (e.g. meta-heuristics, hyper-heuristics, evolutionary algorithms, mathematical programming, multi-objective and multi-criteria methods) to tackle constrained combinatorial problems (e.g. vehicle routing, transport planning, personnel scheduling, timetabling, task assignment, room assignment, office space allocation, space planning and similar problems) in order to underpin the development of intelligent decision support systems across a range of real-world applications. Member of the Automated Scheduling, Optimisation and Planning (ASAP) research group (http://www.asap.cs.nott.ac.uk).

Around 25 years of experience in teaching a variety of courses in Universities and Colleges in the UK, Mexico, South Korea and the Czech Republic. Courses taught in the areas of Computer Science, Operations Research and Artificial Intelligence.

Academic Qualifications

- Postgraduate Certificate in Higher Education (PGCHE), The University of Nottingham, 2012. Course accredited by the Institute for Learning and Teaching in Higher Education.

- PhD in Computer Science, The University of Nottingham, 2003. Thesis: *Metaheuristics and Multiobjective Approaches for Space Allocation*. Examination: 19 August 2003. Sponsored by a PROMEP award from CONACYT (National Council for Science and Technology) and by the Universidad Autónoma de Chihuahua in Mexico.

- MSc in Engineering and Computer Science, Instituto Tecnologico de Chihuahua, 1997. Thesis: *Caracterización de los Dermatoglifos Palmares como una Nueva Metodologia de Identificación Biométrica (Characterization of the Hand Palms Dermatoglyphics as a New Approach for Biometric Verification)*. Examination: 14 March 1997. Sponsored by CONACYT (National Council for Science and Technology) and by the Universidad Autónoma de Chihuahua in Mexico.

- BSc in Industrial Electronic Engineering, Instituto Tecnologico de Veracruz, 1991. Studentship from SEP (Ministry of Public Education).

- Certificate in Electro-mechanics, CBTIS 13, 1987.

History of Professional Activities

- Principal investigator on research and knowledge transfer grants from EPSRC and Innovate UK with a total value of over £1.2M

- Over 95 scientific publications in journals, edited books, and proceedings of international conferences and workshops, see: http://www.cs.nott.ac.uk/~pszjds/research/publications.html

- Member of Editorial Board for the journals: Memetic Computing (Springer) and Neural Computing and Applications (Springer).

- Member of various Programme and Technical Committees of international conferences and workshops, see: http://www.cs.nott.ac.uk/~pszjds/committees.html

- Chair and Co-chair of various streams, tracks and special sessions in international conferences and workshops, see: http://www.cs.nott.ac.uk/~pszjds/committees.html

- Referee for scientific journals, see: http://www.cs.nott.ac.uk/~pszjds/reviewing.html
- Leader of NATCOR Course '*Heuristics and Approximation Algorithms*' during 2014, 2016 and 2018, see: http://www.natcor.ac.uk/courses/
- Research Supervision Completed:
  - 3 Post-doctoral Research Projects
  - 1 R&D Collaborative Project
  - 5 Industrial Research Associate (KTP project)
  - 10 PhD Theses
  - 1 MRes Thesis
- Book reviewer for Journal of the Operational Research Society and Interfaces Journal, see: http://www.cs.nott.ac.uk/~pszjds/reviewing.html

Teaching Experience

- Simulation and Optimization for Decision Support (G54SOD), University of Nottingham, since 2017.
- Linear and Discrete Optimization (G54LDO), University of Nottingham, since 2016.
- Operations Research in Practice (ISC297), Korea University (Invited Adjunct Professor), Six Weeks During July and August, since 2017.
- Introduction to Computer Science (ISC293), Korea University (Invited Adjunct Professor), Six Weeks During July and August, since 2010.
- Introduction to Management Science (ISC297), Korea University (Invited Adjunct Professor), Six Weeks During July and August, since 2014 until 2016.
- Data Analysis and Business Modelling (ISC296), Korea University (Invited Adjunct Professor), Six Weeks During July and August, since 2011 until 2013.
- Computers in the World (G53CWO), University of Nottingham, 2014-2015.
- Operations Research and Modelling (G54ORM), University of Nottingham, 2010-2015.
- Heuristic Methods for Search and Optimization (PA184), Masaryk University (Czech Republic), Erasmus Mobility, April 2010.
- Operations Research and Optimisation (G53ORO), University of Nottingham, 2008-2012.
- Quality Assurance and Testing (G53QAT), University of Nottingham, 2010.
- Heuristic Search Methods (G54HSM), University of Nottingham, 2008-2010.
- Algorithm Design and Operations Research (G54AOR), University of Nottingham, 2007-2010.
- Computability (G53COM), University of Nottingham, 2005-2007.
- Large Scale Systems Design (G52lSS), University of Nottingham, 2005-2008.
- Commercial and Industrial Systems Design (G52CSD), University of Nottingham, 2004-2005.
- Tutor in Information Technology, Centre for Continuing Education, September 2000-February 2009.
- **Other Courses Taught in Higher (UG and PG) Education**: Security in Personal Computing, PC Fundamentals, Information Age, Digital Media, Digital Sound and MIDI Production, IT Project, Diploma in Office Application Software, Discrete Mathematics, Algorithms Design, Theory of Computational Languages, Data Structures, C/C++ Programming, Artificial Intelligence, Computer Graphics, Compilers Construction, Intelligent Systems, Systems Programming, Delphi Programming.

Selected Publications

See the full list at http://www.cs.nott.ac.uk/~pszjds/research/publications.html

- Osman A. Ibrahim, Dario Landa-Silva. *An Evolutionary Strategy with Machine Learning for Learning to Rank in Information Retrieval*. Soft Computing, Vol. XX, No. X, pp. XX-XX, 2018. DOI: 10.1007/s00500-017-2988-6

- Wasakorn Laesanklang, Dario Landa-Silva. *Decomposition Techniques with Mixed Integer Programming and Heuristics for Home Healthcare Planning*. Annals of Operations Research, Vol. 256, No. 1, pp. 93-127, 2017. DOI: 10.1007/s10479-016-2352-8

- Anna Martinez-Gavara, Dario Landa-Silva, Vicente Campos, Rafael Marti. *Randomized Heuristics for the Capacitated Clustering Problem*. Information Sciences, Vol. 417, pp. 154-168, 2017. DOI: 10.1016/j.ins.2017.06.041

- Rodrigo Lankaites Pinheiro, Dario Landa-Silva, Jason Atkin. *A Technique Based on Trade-off Maps to Visualise and Analyse Relationships Between Objectives in Optimisation Problems*. Journal of Multi-criteria Decision Analysis, Vol. 24, No. 1-2, pp. 37-56, 2017. DOI: 10.1002/mcda.1604

- Rodrigo Lankaites Pinheiro, Dario Landa-Silva, Rong Qu, Ademir Aparecido Constantino, Edson Yanaga. *An Application Programming Interface with Increased Performance for Optimisation Problems Data*. Journal of Management Analytics, Vol. 3, No. 4, pp. 305-332, 2016. DOI: 10.1080/23270012.2016.1233514

- Osman A. Ibrahim, Dario Landa-Silva. *Term Frequency with Average Term Occurrences For Textual Information Retrieval*. Soft Computing, Vol. 20, No. 8, pp. 3045-3061, 2016. DOI: 10.1007/s00500-015-1935-7

- J. Arturo Castillo-Salazar, Dario Landa-Silva, Rong Qu. *Workforce Scheduling and Routing Problems Literature Survey and Computational Study*. Annals of Operations Research, Vol. 239, No. 1, pp. 39-67, 2016. DOI: 10.1007/s10479-014-1687-2

- Osman A. Ibrahim, Dario Landa-Silva. *Term Frequency with Average Term Occurrences For Textual Information Retrieval*. Soft Computing, pp. 1-17, Springer Online First, December 2015. DOI: 10.1007/s00500-015-1935-7

- Jesica de Armas, Eduardo Lalla-Ruiz, Christopher Exposito-Izquierdo, Dario Landa-Silva, Belen Melian-Batista. *A Hybrid GRASP-VNS for Ship Routing and Scheduling Problem with Discretized Time Windows*. Engineering Applications of Artificial Intelligence, 45, pp. 350-360, Elsevier, October 2015. DOI: 10.1016/j.engappai.2015.07.013

- J. A. Castillo-Salazar, D. Landa-Silva, R. Qu. *Workforce Scheduling and Routing Problems Literature Survey and Computational Study*. Annals of Operations Research, Springer Online First, August 2014. DOI: 10.1007/s10479-014-1687-2

- A. A. Constantino, D. Landa-Silva, E. L. de Melo, C. F. X. de Mendonça, D. Baroni Rizzato, W. Romão. *A Heuristic Algorithm Based on Multi-assignment Procedures for Nurse Scheduling*. Annals of Operations Research, 128(1), pp. 165-183, 2014. DOI: 10.1007/s10479-013-1357-9

- R. Qu, Y. Xu, J.P. Castro, D. Landa-Silva. *Particle Swarm Optimization for the Steiner Tree in Graph and Delay-Constrained Multicast Routing Problems*. Journal of Heuristics, 19(2), pp. 317-342, 2013. DOI: 10.1007/s10732-012-9198-2

- H. Li, D. Landa-Silva. *An Adaptive Evolutionary Multi-objective Approach Based on Simulated Annealing*. Evolutionary Computation Journal, 19(4), pp. 561-595, 2011. DOI: 10.1162/EVCO_a_00038

- Ö Ülker, D. Landa-Silva. *A 0/1 Integer Programming Model for the Office Space Allocation Problem*. Electronic Notes in Discrete Mathematics, 36, pp. 575-582, 2010. DOI: 10.1016/j.endm.2010.05.073

- C. Beyrouthy, E.K. Burke, D. Landa-Silva, B. McCollum, P. McMullan, A.J. Parkes. *Towards Improving the Utilisation of University Teaching Space*. Journal of the Operational Research Society, 60, pp. 130-143, 2007. DOI: 10.1057/palgrave.jors.2602523

- E.K. Burke, J.D. Landa Silva. *Asynchronous Cooperative Local Search for the Office Space Allocation Problem*. INFORMS-Journal on Computing, 19(4), pp. 575-587, 2007. DOI: 10.1287/ijoc.1060.0200

- E.K. Burke, J.D. Landa Silva. *The Influence of the Fitness Evaluation Method on the Performance of Multiobjective Search Algorithms*. European Journal of Operational Research, 169(3), pp. 875-897, 2006. DOI: 10.1016/j.ejor.2004.08.028

Delivered Seminars

- **Invited Speaker**: Talk 'Heuristic Techniques for Industrialising Construction: Overview and Opportunities'. Workshop on Integrated Process Planning and Scheduling for Industrialising Construction: Design, Manufacture and Assembly, London, UK, June 2016.

- **Invited Speaker**: Talk 'Moodle activities to promote student engagement in a Computing Professional Ethics Module'. Teaching Transformation Programme (TTP) Conference, The University of Nottingham, UK, April 2015.

- **Invited Plenary Speaker**: Talk 'Heuristic and Evolutionary Algorithms for Tackling Complex Logistic Problems'. CICos 2014 – International Congress of Computing for Optimization and Software, Cuernavaca, Mexico, October 2014.

- **Invited Speaker**: Seminar 'Heuristics, Metaheuristics and Hyperheuristics'. CICos 2014 – International Congress of Computing for Optimization and Software, Cuernavaca, Mexico, October 2014.

- **Invited Plenary Speaker**: Talk 'Workforce Scheduling and Routing – Survey, Computational Study and Recent Developments'. XLVI SBPO – Simpósio Brasileiro de Pesquisa Operacional, Salvador, Brazil September 2014.

- **Invited Speaker**: Talk 'Applying Heuristic and Evolutionary Algorithms to Solve Complex Logistic Problems'. "CiTi – Congreso Internacional de Tecnologias de la Informacion (International Congress of Information Technologies)" organised by Universidad de Colima, Colima, Mexico, 19-21 September 2012.

- **Invited Speaker**: Talk 'Cooperative Hyper-heuristics for Combinatorial Optimisation'. Seminar Series UAI 2010 "Ultimos Avances en Informatica (Latest Advances in Computing)" organised by ULL, La Laguna, Tenerife, Spain, November 2010.

- **Invited Speaker**: Talk '*Self-adaptation, Cooperation and Self-assembly in Heuristic Design*'. Seminar Series UAI 2009 "Ultimos Avances en Informatica (Latest Advances in Computing)" organised by ULL, La Laguna, Tenerife, Spain, November 2009.

- **Invited Speaker**: Talk '*Planificacion Integral de la Actividad Logistica (Integrated Planning for Logistic Activity)*'. Sixth Forum on "Technological Innovations for Transport (Transnova 2009)" organised by ULL and Government of Canary Islands, Las Palmas, Gran Canaria, Spain, June 2009.

- **Invited Keynote Speaker**: Talk '*Multi-objective Meta-heuristics for Scheduling and Timetabling*'. Workshop on "Multi-objective Meta-heuristics" organised by EU/ME and PM20, Paris, November 2002.