Curriculum Vitae

Daniel Guimarans
Amazon
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April 4, 2024

Principal Research Scientist at **Amazon**, Luxembourg.

Areas of Expertise

Optimisation, Constraint Programming, Heuristics and Metaheuristics, Simulation, Data Analysis, Logistics, Transportation, Routing, Scheduling, Aviation.

Research Work Experience

2022 –	**Principal Research Scientist**, Amazon; Barcelona (Spain) / Luxembourg (Luxembourg).
2020 – 2022	**Senior Research Scientist**, Amazon; Luxembourg (Luxembourg).
2019 – 2020	**Research Fellow** in Optimisation / Data Science & Artificial Intelligence, Faculty of IT, Monash University; Melbourne (Australia).
2015 – 2019	**Senior Researcher - Lecturer**, Aviation Academy, Amsterdam University of Applied Sciences; Amsterdam (Netherlands).
2013 – 2015	**Researcher**, Optimisation Research Group and Infrastructure, Transport and Logistics Group, National ICT Australia (NICTA); Sydney (Australia).
2012 – 2013	**Postdoctoral Researcher / Adjunct Lecturer**, Department of Telecommunications and Systems Engineering, Autonomous University of Barcelona; Barcelona (Spain).
2007 – 2012	**PhD Student / Adjunct Lecturer**, Department of Telecommunications and Systems Engineering, Autonomous University of Barcelona; Barcelona (Spain).
2005 – 2007	**Research Assistant / Adjunct Lecturer**, Department of Telecommunications and Systems Engineering, Autonomous University of Barcelona; Barcelona (Spain).

Education

2012	**Ph.D.** (Cum Laude) in Computer Science – Autonomous University of Barcelona, Barcelona (Spain). Dissertation title: *Hybrid Algorithms for Solving Routing Problems*.
2007	**M.Sc.** in Industrial Computer Science and Advanced Production Techniques – Autonomous University of Barcelona, Barcelona (Spain). Dissertation title: *A Decision Support System for the Emergency Services Coordination Problem in a Road Accident*.
2005	Bachelor in **Physics** – Autonomous University of Barcelona, Barcelona (Spain).
2004	Minor in **Applied Mathematics** – Autonomous University of Barcelona, Barcelona (Spain).

INDUSTRY-SPONSORED RESEARCH PROJECTS

2019 **Peak-hour Passenger Shifting to Reduce Congestion in Melbourne's Rail Network**, Monash University and Public Transport of Victoria (PTV), Melbourne (Australia).

2018 **U-SMILE: Data Analysis and Simulation of Amsterdam's Green Taxi Fleet**, Amsterdam University of Applied Sciences and Amsterdam City Council, Amsterdam (Netherlands).

2015 **Analysis of Impact of the New Light Rail System in Canberra's City Centre Traffic**, NICTA (Optimisation Research Group) and Australian Capital Territory (ACT) Government, Canberra (Australia).

2014 **Pilot Productivity in the Virgin Australia E190 Fleet**, NICTA (Optimisation Research Group) and Virgin Australia, Sydney (Australia).

2013 – 2014 **Simulation and Analysis of Container Freight Train Operations at Port Botany**, NICTA (Optimisation Research Group) and NSW Ports (Sydney Ports Corporation), Sydney (Australia).

ACADEMIC RESEARCH PROJECTS

2011 – 2014 **HAROSA@IB: Iberoamerican Network for algorithms, open source software and distributed computing for solving routing, scheduling and availability problems**, Open University of Catalonia, Barcelona (Spain).

2011 – 2014 **Simulation and Optimisation of Logistics and Manufacture Systems**, National Autonomous University of Mexico, Mexico City (Mexico).

2005 – 2013 **LOGISIM: Modelling, Simulation and Optimisation of Logistics Systems**, Autonomous University of Barcelona, Barcelona (Spain).

2009 – 2012 **Hybrid algorithms for solving realistic routing, scheduling and availability problems**, Open University of Catalonia, Barcelona (Spain).

AWARDS AND HONOURS

2016 **Media citations** in *The Sydney Morning Herald*, *The Australian* and *Lloyd's List*. Featured article in *The Conversation*.
Cited work: Daniel Guimarans, Daniel Harabor, Pascal Van Hentenryck. Simulation and Analysis of Container Freight Train Operations at Port Botany. Available in arXiv.

2014 **Best Industry Project**, *NICTA*.
Awarded work: Capacity Assessment of Port Botany
Authors: Daniel Guimarans, Daniel Harabor, Pascal Van Hentenryck

2008 **Sant Jordi Award 2008: Best Information Technology Master Thesis**, *Societat Catalana de Tecnología (Catalan Technology Society) – Catalan Government*.
Awarded work: A Decision Support System for the Emergency Services Coordination Problem in a Road Accident

PUBLICATIONS

Journal Articles

1) Yagmur S. Gok, Silvia Padrón, Maurizio Tomasella, Daniel Guimarans, Cemalettin Ozturk. Constraint-based Robust Planning and Scheduling of Airport Apron Operations through Simheuristics. **Annals of Operations Research**, 320, pp. 795–830, 2023.
2) Daniel Guimarans, Silvia Padrón. A Stochastic Approach for Planning Airport Ground Support Resources. **International Transactions in Operational Research**, 29 (6), pp. 3316–3345, 2022.

3) Carlos L. Quintero-Araujo, Daniel Guimarans, Àngel A. Juan. A Simheuristic Algorithm for the Capacitated Location Routing Problem with Stochastic Demands. **Journal of Simulation**, 15 (3), pp. 217–234, 2021.
4) Silvia Padrón, Daniel Guimarans. An Improved Method for Scheduling Aircraft Ground Handling Operations from a Global Perspective. **Asia-Pacific Journal of Operational Research**, 36 (4), pp. 1–25, 2019.
5) Daniel Guimarans, Oscar Domínguez, Javier Panadero, Àngel A. Juan. A Simheuristic Approach for the Two-Dimensional Vehicle Routing Problem with Stochastic Travel Times. **Simulation Modelling Practice and Theory**, 89, pp. 1–14, 2018.
6) Oscar Domínguez, Daniel Guimarans, Àngel A. Juan, Ignacio de la Nuez. A Biased-Randomised Large Neighbourhood Search for the Two-Dimensional Vehicle Routing Problem with Backhauls. **European Journal of Operational Research**, 255, pp. 442–462, 2016.
7) Silvia Padrón, Daniel Guimarans, Juan José Ramos, Salma Fitouri-Trabelsi. A Bi-objective Approach for Scheduling Ground Handling Vehicles in Airports. **Computers & Operations Research**, 71, pp. 34–53, 2016.
8) Albert Ferrer, Daniel Guimarans, Helena Ramalhinho, Àngel A. Juan. A BRILS Metaheuristic for Non-Smooth Flow-Shop Problems with Failure-Risk Costs. **Expert Systems with Applications**, 44, pp. 177–186, 2016.
9) Àngel A. Juan, Iñaki Pascual, Daniel Guimarans, Barry Barrios. Combining Biased Randomization with Iterated Local Search for Solving the Multi-depot Vehicle Routing Problem. **International Transactions in Operational Research**, 22 (4), pp. 647–667, 2015.
10) José Cáceres-Cruz, Pol Arias, Daniel Guimarans, Daniel Riera, Àngel A. Juan. Rich Vehicle Routing Problem: Survey. **ACM Computing Surveys**, 47 (2), pp. 1–28, 2014.
11) Daniel Guimarans, Rosa Herrero, Daniel Riera, Àngel A. Juan, Juan José Ramos. Combining Probabilistic Algorithms, Constraint Programming and Lagrangian Relaxation to Solve the Vehicle Routing Problem. **Annals of Mathematics and Artificial Intelligence**, 62 (3–4), pp. 299–315, 2011.
12) Daniel Guimarans, Rosa Herrero, Juan José Ramos, Silvia Padrón. Solving Vehicle Routing Problems Using Constraint Programming and Lagrangian Relaxation in a Metaheuristics Framework. **International Journal of Information Systems & Supply Chain Management**, 4 (2), pp. 61–81, 2011.

Working Papers

1) Daniel Guimarans, Daniel Harabor, Pascal Van Hentenryck. Simulation and Analysis of Container Freight Train Operations at Port Botany. Available in *arXiv*.

Books

1) Miguel Mújica Mota, Idalia Flores, Daniel Guimarans (Eds.). *Applied Simulation and Optimization: In Logistics, Industrial and Aeronautical Practice*. ISBN 978-3-319-15032-1. Springer, 2015.

Book Chapters

1) Daniel Guimarans, Pol Arias, Maurizio Tomasella, Cheng-Lung Wu. A review of sustainability in aviation: a multidimensional perspective. In Javier Faulin, Scott Grasman, Àngel A. Juan, Patrick Hirsch (Eds.), *Sustainable Transportation and Smart Logistics*, Chapter 4 (pp. 91-121). ISBN 978-0-128-14242-4. Elsevier, 2019.
2) Daniel Guimarans, Pol Arias, Miguel Mújica Mota. Large Neighbourhood Search and simulation for disruption management in the airline industry. In Miguel Mújica Mota, Idalia Flores, Daniel

Guimarans (Eds.), *Applied Simulation and Optimization: In Logistics, Industrial and Aeronautical Practice*, Chapter 6 (pp. 169–201). ISBN 978-3-319-15032-1. Springer, 2015.

3) Daniel Guimarans, Rosa Herrero, Juan José Ramos, Silvia Padrón. Solving vehicle routing problems using constraint programming and lagrangian relaxation in a metaheuristics framework. In John Wang (Ed.), *Management Innovations for Intelligent Supply Chains*, Chapter 7 (pp. 123–143). ISBN 978-1-466-62461-0. IGI Global, 2013.

Articles in Proceedings

1) Yagmur S. Gok, Maurizio Tomasella, Daniel Guimarans, Cemalettin Ozturk. A simheuristic approach for robust scheduling of airport turnaround teams. In proceedings of *Winter Simulation Conference (WSC 2020)*. Online venue; December, 2020.
2) Yagmur S. Gok, Daniel Guimarans, Peter J. Stuckey, Maurizio Tomasella, Cemalettin Ozturk. Robust resource planning for aircraft ground operations. In proceedings of *International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR 2020)*. Online venue; September, 2020.
3) Maurizio Tomasella, Alexandra Clare, Yagmur S. Gok, Daniel Guimarans, Cemalettin Ozturk. STTAR: A simheuristics-enabled scheme for multi-stakeholder coordination of aircraft turnaround operations. In proceedings of *Winter Simulation Conference (WSC 2019)*. National Harbor, USA; December, 2019.
4) John M. Betts, David L. Dowe, Daniel Guimarans, Daniel D. Harabor, Heshan Kumarage, Peter J. Stuckey, Michael Wybrow. Peak-hour rail demand shifting with discrete optimisation. In proceedings of *International Conference on Principles and Practice of Constraint Programming (CP 2019)*. Stamford, USA; October, 2019.
5) Andrés San Antonio, Àngel A. Juan, Pau Fonseca, Daniel Guimarans, Laura Calvet. Using simulation to estimate critical paths and survival functions in aircraft turnaround processes. In proceedings of *Winter Simulation Conference (WSC 2017)*. Las Vegas, USA; December, 2017.
6) Daniel Guimarans, Pol Arias, Wenjing Zhao. A simheuristic approach for solving the Aircraft Recovery Problem with stochastic delays. In proceedings of *Metaheuristics International Conference (MIC 2017)*. Barcelona, Spain; July, 2017.
7) Pol Arias, Daniel Guimarans, Àngel A. Juan. A simple and efficient metaheuristic for the Dynamic Flight Scheduling Problem. In proceedings of *Metaheuristics International Conference (MIC 2017)*. Barcelona, Spain; July, 2017.
8) Daniel Guimarans, Oscar Domínguez, Àngel A. Juan, Enoc Martínez. A multi-start simheuristic for the stochastic two-dimensional vehicle routing problem. In proceedings of *Winter Simulation Conference (WSC 2016)*. Washington, USA; December, 2016.
9) Ammar Al-Bazi, Yagmur S. Gok, Cemalettin Ozturk, Daniel Guimarans. Developing a mathematical model for scheduling of turnaround operations (low cost airline as a case study). In proceedings of *International Aviation Management Conference (IAMC 2016)*. Dubai, United Arab Emirates; November, 2016.
10) Negar Zakerinejad, Daniel Riera, Daniel Guimarans. ACO and CP working together to build a flexible tool for the Rich VRP. In proceedings of *International Conference on Operations Research and Enterprise Systems (ICORES 2016)*. Rome, Italy; February, 2016.
11) Oscar Domínguez, Daniel Guimarans, Àngel A. Juan. A hybrid heuristic for the 2L-VRP with clustered backhauls. In proceedings of *Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA 2015)*. Albacete, Spain; September, 2015.
12) Wei Sun, Daniel Guimarans, Alan Fekete, Vincent Gramoli, Liming Zhu. Multi-objective optimisation for rolling upgrade allowing for failures in clouds. In proceedings of *34th Symposium on Reliable Distributed Systems (SRDS 2015)*. Montreal, Canada; September, 2015.

13) Daniel Guimarans, Silvia Padrón, Juan José Ramos, Salma Fitouri-Trabelsi. Scheduling ground-handling services: a bi-objective approach. In proceedings of *International Conference on Applied Operational Research (ICAOR)*. Vienna, Austria; July, 2015.
14) Miguel A. Mújica Mota, Idalia Flores, Daniel Guimarans. CPN-Simulation methodology for the boarding process of aircraft. In proceedings of *European Modelling and Simulation Symposium 2014*. Bourdeaux, France; September, 2014.
15) Pol Arias, Daniel Guimarans, Miguel A. Mújica, Geert Boosten. A methodology combining optimisation and simulation for real applications of the Stochastic Aircraft Recovery Problem. In proceedings of *EUROSIM 2013*. Cardiff (Wales), United Kingdom; September, 2013.
16) Pol Arias, Daniel Guimarans, Miguel A. Mújica. A new methodology to solve the Stochastic Aircraft Recovery Problem using optimisation and simulation. In proceedings of *International Conference on Interdisciplinary Science for Innovative Air Traffic Management (ISIATM)*. Toulouse, France; July, 2013.
17) Daniel Guimarans, Julija Petuhova, Yuri Merkuryev, Juan José Ramos. Supply chain simulation methods analysis: an application to the Beer Game. In proceedings of *International Conference on Harbour, Maritime & Multimodal Logistics Modelling and Simulation*. Fez, Morocco; October, 2010.
18) Juan José Ramos, Silvia Padrón, Laura Guillén, Miquel Àngel Piera, Daniel Guimarans, Rosa Herrero. Intelligent platform for sustainable routing. *XV Summer School 'Francesco Turco'*. Porto Giardino, Italy; September, 2010.
19) Rosa Herrero, Juan José Ramos, Daniel Guimarans. Lagrangian metaheuristic for the Travelling Salesman Problem. In proceedings of *Operations Research Society Annual Conference (OR52)*. Surrey, United Kingdom; September, 2010.
20) Rosa Herrero, Daniel Guimarans, Juan José Ramos, Silvia Padrón. A Variable Neighbourhood Search combining Constraint Programming and Lagrangian Relaxation for solving routing problems. In proceedings of *Summer Computer Simulation Conference 2010*. Ottawa, Canada; July, 2010.
21) Daniel Guimarans, Rosa Herrero, Daniel Riera, Àngel A. Juan, Juan José Ramos. Combining Constraint Programming, Lagrangian Relaxation and probabilistic algorithms to solve the Vehicle Routing Problem. In proceedings of *RCRA International Workshop 2010 (CP-AI-OR'10)*. Bologna, Italy; June, 2010.
22) Daniel Guimarans, Juan José Ramos, Mark Wallace, Daniel Riera. A hybrid Constraint Programming / local search approach to the Pick-up and Delivery Problem with Time Windows. In proceedings of *European Modelling and Simulation Symposium 2009*. Puerto de la Cruz, Spain; September, 2009.
23) Rosa Herrero, Daniel Guimarans, Juan José Ramos. Solving the Travelling Salesman Problem with Time Windows by Lagrangian Relaxation. In proceedings of *European Modelling and Simulation Symposium 2009*. Puerto de la Cruz, Spain; September, 2009.
24) Daniel Riera, Àngel A. Juan, Daniel Guimarans, Estel·la Pagans. A Constraint Programming-based library for the Vehicle Routing Problem. In proceedings of *European Modelling and Simulation Symposium 2009*. Puerto de la Cruz, Spain; September, 2009.
25) Pedro Balaguer, Asier Ibeas, Carles Pedret, Daniel Guimarans, Roman Buil. Expanding virtual laboratories through guiding and assessment: an expert system approach. In proceedings of *5th IADAT International Conference on Education*. Bilbao, Spain; June, 2009.
26) Daniel Guimarans, Juan José Ramos. A two-stage approach for the emergency services coordination problem in a road accident. In proceedings of *European Modelling and Simulation Symposium 2007*. Genova, Italy; October, 2007.
27) Daniel Guimarans, Juan José Ramos, Miquel Àngel Piera, Antoni Guasch. Un entorno de simulación para el diseño de herramientas de toma de decisiones en logística de transporte. In proceed-

ings of *Congreso Español De Informática (CEDI 2007) - Simposio de Modelado y Simulación de Sistemas Dinámicos*. Zaragoza, Spain; September, 2007.
28) Juan José Ramos, Daniel Guimarans, Miquel Àngel Piera, Antoni Guasch. A technological platform for designing real-time decision tools in transportation logistics. In proceedings of *European Modelling and Simulation Symposium 2006*. Barcelona, Spain; October, 2006.
29) Daniel Guimarans, Juan José Ramos, Miquel Àngel Piera, Antoni Guasch. A simulation based decision tool to coordinate emergency services in a road accident. In proceedings of *Summer Computer Simulation Conference 2006*. Calgary, Canada; July, 2006.

Conference and Workshop Presentations

1) Charupriya Sharma, George Iosifidis, Daniel Guimarans, Amit Kumar, Georgios Paschos. A scalable solution to joint routing and sorting problems. *European Conference on Operational Research (EURO)*. Copenhagen, Denmark; July, 2024.
2) Silvia Padrón, Maurizio Tomasella, Elisa Guardo, Daniel Guimarans, Cemalettin Ozturk. Cross-organisational Coordination in Apron Operations. *European Conference on Operational Research (EURO)*. Copenhagen, Denmark; July, 2024.
3) Cansu Agrali, Onur Can Saka, Faheem Zafari, Daniel Guimarans, George Iosifidis, Amit Kumar. Long-term Capacity and Topology Planning for a Large Delivery Network. *INFORMS Annual Meeting*. Phoenix, USA; October, 2023.
4) Yagmur S. Gok, Silvia Padrón, Maurizio Tomasella, Daniel Guimarans, Cemalettin Ozturk. Constraint-Based Robust Scheduling of Apron Operations through Simheuristics. *INFORMS Annual Meeting*. Anaheim, USA; October, 2021.
5) Yagmur S. Gok, Maurizio Tomasella, Daniel Guimarans, Cemalettin Ozturk. A simheuristic approach to solve tactical airport ground service equipment planning. *Winter Simulation Conference (WSC)*. National Harbor, USA; December, 2019.
6) Carlos Quintero-Araujo, Daniel Guimarans, Àngel A. Juan. A simheuristic algorithm for the capacitated location routing problem with stochastic demands. *Metaheuristics International Conference (MIC)*. Cartagena, Colombia; July, 2019.
7) Yagmur S. Gok, Maurizio Tomasella, Daniel Guimarans, Cemalettin Ozturk, Silvia Padrón. A hybrid simulation-optimisation approach for scheduling airport ground service equipment. *European Conference on Operational Research (EURO)*. Dublin, Ireland; June, 2019.
8) Daniel Guimarans, Arjen Peters, Younes Boulaksil. A decision support system to assist airport operators solving terminal disruptions ASAP. *European Conference on Operational Research (EURO)*. Valencia, Spain; July, 2018.
9) Yagmur S. Gok, Maurizio Tomasella, Daniel Guimarans, Cemalettin Ozturk. New efficient heuristics to solve tactical airport check-in allocation problems. *European Conference on Operational Research (EURO)*. Valencia, Spain; July, 2018.
10) Silvia Padrón, Daniel Guimarans. Using simulation for evaluating ground handling solutions reliability under stochastic conditions. *ROADEF 2018*. Lorient, France; February, 2018.
11) Daniel Guimarans. A Constraint Programming approach for the airport gate assignment problem considering regular and disrupted operations. *Conference of the International Federation of Operational Research Societies (IFORS) 2017*. Quebec City, Canada; July, 2017.
12) Daniel Guimarans, Pol Arias, Gilbert Laporte. A hybrid approach for the two-dimensional vehicle routing problem with balanced load (2BL-VRP). *Conference of the International Federation of Operational Research Societies (IFORS) 2017*. Quebec City, Canada; July, 2017.
13) Hanna Grzybowska, Daniel Guimarans. Real-Time Field Service Engineer Scheduling Problem with Emergencies and Collaborations: a Simulation-Optimization Approach. *Transportation Research Board 2017 Annual Meeting (TRB)*. Washington, USA; January, 2017.

14) Daniel Guimarans, Hanna Grzybowska. Real-Time Field Service Engineer Scheduling Problem with Emergencies and Collaborations: a Simulation-Optimisation Approach. *European Conference on Operational Research (EURO)*. Poznań, Poland; July, 2016.
15) Yagmur S. Gok, Ammar Al-Bazi, Cemalettin Ozturk, Daniel Guimarans. Scheduling ground operations for improved aircraft turnaround performance: A Turkish low-cost airline case study. *European Conference on Operational Research (EURO)*. Poznań, Poland; July, 2016.
16) Daniel Guimarans. Simulation and Optimisation: We are here to help! Keynote presentation at *International Conference on Air Transport (INAIR) 2015*. Amsterdam, Netherlands; November, 2015.
17) Philip Kilby, Ignasi Abio, Daniel Guimarans, Daniel Harabor, Patrik Haslum, Valentin Mayer-Eichberger, Fazlul Siddiqui, Sylvie Thiebaux, Tommaso Urli. There's more than one way to solve a long-haul transportation problem. *EURO Working Group on Vehicle Routing and Logistics Optimization (VeRoLog)*. Vienna, Austria; June, 2015.
18) Negar Zakerinejad, Daniel Riera, Daniel Guimarans. Ant Colony Optimization and Constraint Programming Working Together for Routing in Smart Cities. *Second Workshop on Optimization for Smart Cities - Opt4SmartCities (CP-AI-OR'15)*. Barcelona, Spain; May, 2015.
19) Daniel Guimarans, Pol Arias, Miguel A. Mújica Mota. A large neighbourhood search combined with Monte Carlo simulation to cope with airlines operational disruptions. *Conference of the International Federation of Operational Research Societies (IFORS) 2014*. Barcelona, Spain; July, 2014.
20) Daniel Guimarans, Daniel Harabor, Pascal Van Hentenryck. A simulation approach to analyse rail capacity at Sydney's Port Botany. *Conference of the International Federation of Operational Research Societies (IFORS) 2014*. Barcelona, Spain; July, 2014.
21) Daniel Guimarans, Daniel Harabor, Pascal Van Hentenryck. Scheduling container trains at Port Botany. *Conference of the International Federation of Operational Research Societies (IFORS) 2014*. Barcelona, Spain; July, 2014.
22) Albert Ferrer, Daniel Guimarans, Helena Ramalhinho, Àngel A. Juan. Solving non-smooth flow-shop problems with failure-risk penalties using biased-randomized local search. *Conference of the International Federation of Operational Research Societies (IFORS) 2014*. Barcelona, Spain; July, 2014.
23) Daniel Riera, Daniel Guimarans, Pol Arias, José Cáceres, Àngel A. Juan. Solving the R^2VRP (Real Rich VRP). *CYTED-HAROSA Workshop*. Valparaíso, Chile; November, 2012.
24) Daniel Guimarans. On the use of Constraint Programming and metaheuristics for solving routing problems. *IN3-HAROSA International Workshop for Junior Researchers*. Barcelona, Spain; July, 2012.
25) Daniel Guimarans. Hybrid algorithms for solving routing problems. *IN3-HAROSA International Workshop*. Barcelona, Spain; June, 2012.
26) Daniel Guimarans, Juan José Ramos, Rosa Herrero, Silvia Padrón. Combining metaheuristics, Constraint Programming and Lagrangian Relaxation to tackle routing problems. *IN3-HAROSA International Workshop*. Barcelona, Spain; November, 2010.

Public Media Articles

1) Daniel Harabor, Daniel Guimarans, Pascal Van Hentenryck. Port Botany doesn't need another expensive rail project – here is the evidence. *The Conversation*. February, 2016.

SOFTWARE LICENSES

2010 *ITSLogisim Optimisation Suite 1.0*, Autonomous University of Barcelona, Barcelona (Spain). Licensed company: Digital Aeronautics Engineering Services.

Optimisation platform for solving vehicle routing problems with additional side constraints.

2010 *ITSLogisim Simulation Suite 1.0*, Autonomous University of Barcelona, Barcelona (Spain). Licensed company: Digital Aeronautics Engineering Services.
Distributed simulation / optimisation platform for solving road transportation problems.

SUPERVISED PHD THESES

Grad. 2021 Yagmur Simge Gok. *Simulation Optimisation Approaches for Robust Scheduling of Airport Ground Handling Tasks and Teams* – University of Edinburgh.

Grad. 2021 David Raba. *Big Data for Supply Chain Management Optimization* – Open University of Catalonia / UBIKWA (Industry PhD); Technical Advisor.

Grad. 2014 Silvia Padrón. *A multi-objective optimization approach to the ground handling scheduling problem* – Autonomous University of Barcelona.

PROFESSIONAL AND EDITORIAL ACTIVITIES

- Conference Program Committee / Reviewer:
  - *International Joint Conference on Artificial Intelligence* (IJCAI), *International Conference on Automated Planning and Scheduling* (ICAPS), *European Conference on Operational Research* (EURO), *Winter Simulation Conference* (WSC), *Metaheuristics International Conference* (MIC), *Transportation Research Board (TRB) Annual Meeting*, *European Modelling and Simulation Symposium* (EMSS), *Australasian Transport Research Forum* (ATRF), *International Conference on Air Transport* (INAIR).
- Journal Reviewer:
  - *European Journal of Operational Research*, *Computers and Operations Research*, *Applied Soft Computing*, *Annals of Operations Research*, *Operational Research*, *Simulation Modelling Practice and Theory*, *International Journal of Simulation and Process Modelling*, *Simulation: Transactions of The Society for Modeling and Simulation International*, *IEEE Computational Intelligence Magazine*, *Journal of Air Transport Management*, *Mathematical Problems in Engineering*, *Journal of Computer Science*.
- Member of the Transportation Research Board (TRB) Standing Committees on *Artificial Intelligence and Advanced Computing Applications* and *Airfield and Airspace Capacity and Delay*.
- Organising Committee of 2006 International Mediterranean Modelling Multiconference (I3M). *International Mediterranean and Latin American Council of Simulation (IMCS)*.
- Member of the board of the Department of Telecommunications and Systems Engineering, Autonomous University of Barcelona; 2006 – 2010.

VISITS AT RESEARCH CENTRES

2017 Development of simheuristics for road and air transportation problems; Smart Logistics and Production research group, **Open University of Catalonia**, Barcelona (Spain).

2016 Definition and formulation of two-dimensional vehicle routing problems with balance constraints; **CIRRELT - Université de Montréal**, Montréal (Canada).

2014 Non-smooth flow-shop and vehicle routing problems; Smart Logistics and Production research group, **Open University of Catalonia**, Barcelona (Spain).

2012 Applying heuristics for solving the Multi-Depot Vehicle Routing Problem; Smart Logistics and Production research group, **Open University of Catalonia**, Barcelona (Spain).

2010 Hybridisation of metaheuristics and search methods based on Constraint Programming; Faculty of Information Technology, **Monash University**, Melbourne (Australia).

2009 Modelling, symmetries study, and solving the Beer Game problem; Department of Modelling and Simulation, **Riga Technical University**, Riga (Latvia).

2008 Modelling and solving the VRP using Constraint Programming; Faculty of Information Technology, **Monash University**, Melbourne (Australia).

TEACHING EXPERIENCE

Courses

2016 – 2019 **Operational Decision Management**, *Aviation Logistics* – Amsterdam University of Applied Sciences

2015 – 2016 **Modelling and Simulation 3**, *Aviation Operations* – Amsterdam University of Applied Sciences

2010 – 2013 **Airport Operations Management I**, *Aviation Management* – Autonomous University of Barcelona

2010 – 2013 **Airport Operations Management II**, *Aviation Management* – Autonomous University of Barcelona

2011 – 2013 **Engineering Fundamentals**, *Aviation Management* – Autonomous University of Barcelona

2005 – 2009 **Programming Fundamentals**, *Aviation Management* – Autonomous University of Barcelona

2005 – 2008 **Production Planning**, *Computer Science* – Autonomous University of Barcelona

2005 – 2008 **Concurrent Programming**, *Computer Science* – Autonomous University of Barcelona

2005 – present 20+ **Graduation Theses** supervised in Computer Science, Aviation Management, and Aviation Engineering – Autonomous University of Barcelona and Amsterdam University of Applied Sciences

2013 – 2014 **Master Thesis advisor and examiner**, Master in Operational Research – University of Edinburgh

Invited Courses

2012 – 2014 **Constraint Programming: Fundamentals, hybridisation and application cases**, Master in Operational Research – Universidad Nacional Autónoma de Mexico (UNAM)

Education Positions and Committees

2016 – 2019 Program coordinator of Aviation Logistics curriculum – Amsterdam University of Applied Sciences

2015 – 2019 Committee member of Aviation Logistics new curriculum development – Amsterdam University of Applied Sciences

2014 – 2019 Work package leader and committee member of the Aviation Operations Professional Master (AOPM) – Amsterdam University of Applied Sciences

2007 – 2013 Committee member of the European Joint Master on Logistics and Supply Chain Management (LSCM) – Autonomous University of Barcelona

Education Projects

2008 – 2009 Software development for designing and tracking study competencies, time dedication and students evaluation – Autonomous University of Barcelona

2008 – 2009 A methodology for developing digital teaching materials to improve education quality, track competencies, and adapt engineering courses to European Higher Education Area (EHEA) requirements – Autonomous University of Barcelona

LANGUAGES

English Full proficiency. IELTS overall score: 8.5 / 9.
Spanish Native speaker.
Catalan Native speaker.