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Google Scholar: <https://scholar.google.pt/citations?user=cCiaIMwAAAAJ>
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Publons: <https://publons.com/a/1286353/>

Education

Ph.D. in Informatics

Lisbon, Portugal

Faculdade de Ciências da Universidade de Lisboa

Feb. 2013 – May 2017

- *Specialisation:* Informatics Engineering
- *Dissertation title:* Novel Approaches to Cooperative Coevolution of Heterogeneous Multiagent Systems
- Approved with the highest grade (*Distinção e Louvor*)

Act by COTEC – COHiTEC

Lisbon, Portugal

COTEC Portugal / North Carolina State University

Feb. 2015 – Jul. 2015

- Training program in technology commercialization. Over 100 hours on courses, mentoring, and seminars, on topics including intellectual property, business models, financials, funding, go-to-market strategies, and market analysis.
- Participation in the program with the *Ocean Swarm* project. Development of a complete business plan and pitch to investors.

M.Sc. in Informatics Engineering

Lisbon, Portugal

Faculdade de Ciências da Universidade de Lisboa

Sep. 2010 – Nov. 2012

- *Specialisation:* Knowledge and Interaction (focus on Artificial Intelligence)
- *Dissertation title:* Evolution of Self-Organising Behaviours with Novelty Search (grade: 20/20)
- *Final M.Sc. grade:* 19/20

B.Sc. in Informatics Engineering

Lisbon, Portugal

Faculdade de Ciências da Universidade de Lisboa

Sep. 2007 – Jul. 2010

- *Final B.Sc. grade:* 18/20

Experience

Chief Scientist

London / Lisbon

Sonodot Ltd.

Jun. 2018 – Present

- Head of research and development at Sonodot, a startup aimed at building a platform for enabling smart warehouses.
- Strategic planning of software and product development; leading the development team, including supervision and training of interns; developing the platform for ingestion of large volumes of data from IoT devices, real-time cleaning and pre-processing of data, and real-time analytics and visualization.

Invited Assistant Professor

Departamento de Informática da Faculdade de Ciências da Universidade de Lisboa

- Theory of Computation, Programming I, Programming II, Algorithms and Data Structures

Lisbon, Portugal

Sep. 2017 – May 2018

Doctoral Researcher / Integrated member

BioISI – Biosystems and Integrative Sciences Institute, MAS Group

- BioISI co-hosted the PhD research.
- Full integrated member since Oct. 2017.
- Preparation of research proposal ModEst – Student flow modelling in the Portuguese School System (funded, 2018).

Lisbon, Portugal

Feb. 2013 – Dec. 2018

Doctoral / Postdoctoral Researcher

Instituto de Telecomunicações, BioMachines Lab

- Collaboration in research projects in the field of evolutionary computation (see *Research Projects* section), including the PhD research.
- Bolsa de Pós-Doutoramento (BPD) – Instituto de Telecomunicações UID/EEA/50008/2013 Aug. 2017 – Sep. 2017
- Bolsa de Investigação (BI) – Instituto de Telecomunicações UID/EEA/50008/2013 Apr. 2017 – Jul. 2017
- Bolsa de Doutoramento (BD) – FCT SFRH/BD/89095/2012 Apr. 2013 – Mar. 2017
- Bolsa de Investigação (BI) – Instituto de Telecomunicações PEst-OE/EEI/LA0008/2011 Oct. 2012 – Feb. 2013

Lisbon, Portugal

Oct. 2012 – Aug. 2017

Co-founder

Ocean Swarm Lda.

- High-tech startup developing multirobot systems for marine environments.
- Preparation and submission of two Horizon 2020 (European Commission) project proposals, market and product analysis.

Lisbon, Portugal

Mar. 2016 – Sep. 2016

Invited Teaching Assistant

Departamento de Informática da Faculdade de Ciências da Universidade de Lisboa

- Computer Systems Architecture, Programming Laboratories.

Lisbon, Portugal

Sep. 2013 – Dec. 2015

Research Assistant

LabMAG – Agent Modeling Laboratory

- Collaboration in funded projects in the field of artificial intelligence (see *Research Projects* section).
- Bolsa de Investigação a Licenciados (BIL) – FCUL / QREN project nr. 13776 Sep. 2011 – Aug. 2012
- Bolsa de Investigação a Licenciados (BIL) – IST-UTL PTDC/AUR/64384/2006 Oct. 2010 – Jun. 2011
- Bolseiro – Universidade de Lisboa / Fundação Amadeu Dias Sep. 2009 – Jun. 2010
- Bolsa de Iniciação à Investigação (BII) – FCUL / FCT Mar. 2009 – Feb. 2010

Lisbon, Portugal

Jan. 2009 – Nov. 2012

Honors & Awards

2018	Nominated for Best Paper <i>Comparing approaches for evolving high-level robot control based on behaviour repertoires</i>	IEEE CEC
2016	Maxdata Excellence Award in Informatics Best student in the Informatics PhD programme	Maxdata / DI-FCUL
2016	Nominated for Best Paper <i>Cooperative Coevolution of Control for a Real Multirobot System</i>	PPSN
2016	Exame Informática Innovation Award Honourable mention awarded to Ocean Swarm	Exame Informática
2016	Best Robot Video <i>A Sea of Robots</i> , AAI Video Competition	AAAI
2015	Nominated for Best Paper <i>Cooperative Coevolution of Morphologically Heterogeneous Robots</i>	ECAL
2014	Maxdata Excellence Award in Informatics Best student in the Informatics PhD programme	Maxdata / DI-FCUL
2014	Best Student Presentation Nature-inspired Robots workshop (NIR) at PPSN	FoCAS (FET)
2013	Nominated for Best Paper <i>Generic Behaviour Similarity Measures for Evolutionary Swarm Robotics</i>	GECCO
2010	2nd Best BSc Finalist Award Finalists at FCUL in 2009/2010	FCUL
2010	Merit Scholarship Top 7 (0.2%) students in FCUL	University of Lisbon
2009	Merit Scholarship Top 7 (0.2%) students in FCUL	University of Lisbon

2008 Merit Scholarship Top 7 (0.2%) students in FCUL

University of Lisbon

2008 Prémio Fundação da FCUL For a grade over 18/20 in the first year of the BSc

FCUL

Teaching Experience

Invited Assistant Professor

Lisbon, Portugal

Faculdade de Ciências da Universidade de Lisboa

Sep. 2017 – Present

- 2017/18 **Programming II (Prog2-LTI)**
1st-year course on advanced topics of programming, in Python. Starting on Feb. 2018
- 2017/18 **Algorithms and Data Structures (AED)**
1st-year course on algorithms and data structures, in Java. Starting on Feb. 2018
- 2017/18 **Theory of Computation (TC)**
3rd-year course on automata theory and language, computability, and computational complexity
- 2017/18 **Programming I (Prog1-OL)**
1st-year course on Python programming for students from non-informatics undergraduate programs

Invited Teaching Assistant

Lisbon, Portugal

Faculdade de Ciências da Universidade de Lisboa

Sep. 2013 – Dec. 2015

- 2015/16 **Computer Systems Architecture (ASC)**
1st-year course on computer architecture, including Assembly programming
- 2014/15 **Programming Laboratories (LabP)**
1st-year practical course on Java programming, focused on algorithms and data structures
- 2014/15 **Computer Systems Architecture (ASC)**
- 2013/14 **Programming Laboratories (LabP)**
- 2013/14 **Introduction to Computer Systems (ISC)**

Collaborator

Lisbon, Portugal

Faculdade de Ciências da Universidade de Lisboa

Feb. 2013 – Jun. 2013

- 2012/13 **Mobile Robots (RobM)** M.Sc. course on mobile robots

Research Projects

ModEst – Student flow modelling in the Portuguese School System

Fundação para a Ciência e Tecnologia / BioISI

Jun. 2018 – Dec. 2018

- **Objective:** To produce reliable estimates of the relevant variables describing the student movements on the Portuguese educational system, leveraging the large volumes of data owned by DGEEC for 2M+ students.
- **Role:** Proposal writing and project planning. Member of the research team.
- **Funding:** FCT – Artificial Intelligence in Public Administration (DSAIPA/DS/0039/2018)

Novel Approaches to Cooperative Coevolution of Heterogeneous Multiagent Systems

BioISI / Instituto de Telecomunicações

Apr. 2013 – Mar. 2017

- **Objective:** Study and development of new cooperative coevolutionary algorithms for the evolution and optimisation of control for heterogeneous multiagent systems
- **Role:** Leading researcher / PhD student
- **Supervisors:** Prof. Anders Lyhne Christensen (ISCTE-IUL), Prof. Pedro Mariano (FCUL)
- **Funding:** FCT PhD grant (SFRH/BD/89095/2012)

Heterogeneous Ad-hoc Network for the Coordination of Aquatic Drones (HANCAD)

Instituto de Telecomunicações

Apr. 2014 – Mar. 2016

- **Objective:** Design, implement, and test a novel network architecture that enables decentralized coordination between autonomous drones, and to maintain communication links between the drone collective and a base station
- **Role:** Researcher
- **Coordinator:** Prof. Anders Lyhne Christensen, ISCTE-IUL/IT
- **Funding:** Instituto de Telecomunicações (PEst-OE/EEI/LA0008/2013)

Control of Aquatic Drones for Maritime Tasks (CORATAM)

BioMachines Lab / Instituto de Telecomunicações

Apr. 2014 – Jul. 2015

- *Objective:* Design and control of an aquatic multirobot system for maritime tasks
- *Role:* Researcher. Optimisation of control for the multirobot system using evolutionary algorithms
- *Coordinator:* Prof. Anders Lyhne Christensen, ISCTE-IUL/IT
- *Funding:* FCT (EXPL/EEIAUT/0329/2013)

Evolution of Self-Organising Behaviours with Novelty Search

LabMAG

Sep. 2011 – Nov. 2012

- *Objective:* Master's thesis. Study the potential of evolutionary techniques driven by behavioural novelty (novelty search) to synthesise control for swarm robotics systems
- *Role:* Leading researcher / MSc candidate
- *Supervisors:* Prof. Paulo Urbano (FCUL), Prof. Anders Lyhne Christensen (ISCTE-IUL)

PREVER – Forecast and Simulation System for Mobile Workforce

Faculdade de Ciências da Universidade de Lisboa

Sep. 2011 – Aug. 2012

- *Objective:* Forecast system for mobile workforce needs. Usage of data mining and machine learning to forecast grid failures for Portugal's largest electricity operator
- *Role:* Researcher. Evaluation of machine learning algorithms for the forecast system
- *Coordinator:* Prof. Paulo Urbano, FCUL
- *Funding:* COMPETE/QREN (project 13776)

City Induction: a Model for Formulating, Evaluating, and Generating Urban Designs

Faculty of Architecture of Lisbon (FA-UTL)

Oct. 2010 – Jul. 2011

- *Objective:* Design and development of a tool for assisting the urban development process. It targeted district planning, and the goal was to promote the generation of more sustainable urban environments
- *Role:* Researcher. Development of a semantic-web application (4CityPlan) for the categorization and analysis of urban intervention zones
- *Coordinator:* Prof. José Pinto Duarte, FA-UTL
- *Funding:* FCT (PTDC/AUR/64384/2006)

Virtual Art Gallery

University of Lisbon

Sep. 2009 – Jun. 2010

- *Objective:* Development of an application for the composition and adjustment of virtual art galleries, based on X3D technology
- *Role:* Leading researcher
- *Supervisor:* Prof. Maria Beatriz Carmo, FCUL
- *Funding:* University of Lisbon / Fundação Amadeu Dias (UL/FAD grant)

Educational Experiments on Autonomous Robots

LabMAG

Mar. 2009 – Feb. 2010

- *Objective:* Study of experiments with autonomous robots as a way to illustrate key concepts of artificial intelligence
- *Role:* Leading researcher
- *Supervisor:* Prof. Paulo Urbano, FCUL
- *Funding:* FCT initiation grant (BII)

Technical Skills

Programming	Python, R, Java
Artificial Intelligence	Evolutionary computation, neural networks, deep learning, machine learning, robotics, autonomous agents & multiagent systems, swarm intelligence, simulation
Data Engineering	Real-time data pipelines (Kafka, Redis), real-time analytics, REST API development, asynchronous programming, interactive data visualization (Plotly), data wrangling (Pandas, Numpy)
Research & Science	Scientific writing, data processing and visualization, statistical analysis, grid computing
Languages	Portuguese (native), English (full professional proficiency)

Courses

Deep Learning A-Z™: Hands-On Artificial Neural Networks

udemy.com

Udemy / Kirill Eremenko

2018

- Deep Learning in Python and TensorFlow, online course by Kirill Eremenko. 23 hours of lectures plus projects.

University Teaching

coursera.com

Centre for the Enhancement of Teaching and Learning at the University of Hong Kong

Aug. 2017

- Online course with over 20 hours in teaching in tertiary education. Based on research evidence in relation to effective university teaching and practical instructional design strategies.

ROS in a Single Week

Barcelona, Spain

The Construct Sim LTD

Jul. 2016

- Intensive week on ROS (Robot Operating System), including courses, mentoring, and development of a final project.

Open-source Software

MASE – MultiAgent Systems Evolution

<https://github.com/jorgemcgomes/mase>

2013 – present

- *Description:* Framework for the evolution of control for agents and multiagent systems. Supports a wide variety of evolutionary techniques, a large number of robot and multirobot tasks, extensive logging, and analysis tools.
- *Technologies:* Java, R, ECJ Evolutionary Computation Library

4CityPlan

<https://github.com/jorgemcgomes/4cityplan>

2010–2011

- *Description:* Computer-aided urban planning tool driven by Semantic Web ontologies. Allows the classification of the land use and the optimization of facilities' locations.
- *Technologies:* Java, Netbeans Rich-Client Platform, OWL 2, Pellet reasoner, GeoTools GIS toolkit

Virtual Exhibition Builder

<https://github.com/jorgemcgomes/virtualgallery>

2009–2010

- *Description:* Interactive software tool aimed at the creation of virtual exhibitions, given X3D models of the museum, and information about the artworks.
- *Technologies:* Java, X3D, SQLite

Outreach and Community Engagement

- 2015 Participation in the Robotics EXercise (REX'15) organised by the Portugese Navy, at Lisbon Naval Base
- 2015 Showcase of OceanSwarm in the Blue Week trade fair at FIL, Lisbon, June 3–6
- 2008–2014 Volunteer in communication and public outreach activities of the informatics department (FCUL), including Futurália, Ciência Viva, Dia Aberto, and secondary school visits
- 2011 Volunteer in the organization of the 15th Portuguese Conference on Artificial Intelligence, Lisbon
- 2010 Volunteer in the organization of the 19th European Conference on Artificial Intelligence, Lisbon
- 2010 Participation in Inter-University Programming Marathon (MIUP)
- 2009, 2010 Volunteer in Ciência Viva activities at FCUL
- 2009 Participation in Inter-University Programming Marathon (MIUP)
- 2009 Participation in Inter-University Programming Tournament (TIUP)

Reviewing Activities

Publons: <https://publons.com/a/1286353/>

- 2019 Genetic and Evolutionary Computation Conference (GECCO-19) Program Committee
- 2019 IEEE Congress on Evolutionary Computation (CEC-19) Program Committee
- 2018 Swarm Intelligence
- 2018 International Conference on Swarm Intelligence (ANTS-18) Program Committee
- 2018 Genetic and Evolutionary Computation Conference (GECCO-18) Program Committee
- 2017 Swarm and Evolutionary Computation
- 2017 Artificial Intelligence Review

- 2017 Genetic and Evolutionary Computation Conference (GECCO-17) Program Committee
- 2017 International Journal of Parallel, Emergent and Distributed Systems
- 2016 International Symposium on Distributed Autonomous Robotics Systems (DARS)
- 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- 2016 Frontiers in Robotics and AI
- 2015 Scalable Computing: Practice and Experience

Talks

- T17 *Evolving Control for Multiagent Systems with Cooperative Coevolutionary Algorithms*. BioISI Post-Grad Seminar. April 6 2017, Lisbon, Portugal.
- T16 *Comparing approaches for evolving high-level robot control based on behaviour repertoires*. IEEE Congress on Evolutionary Computation (CEC). July 10 2018, Rio de Janeiro, Brasil.
- T15 *Evolving Control for Multiagent Systems with Cooperative Coevolutionary Algorithms*. BioISI Post-Grad Seminar. April 6 2017, Lisbon, Portugal.
- T14 *Cooperative Coevolution of Control for a Real Multirobot System*. Conference on Parallel Problem Solving from Nature (PPSN). September 19 2016, Edinburgh, United Kingdom.
- T13 *Hybrid Control for a Real Swarm Robotic System in an Intruder Detection Task*. European Conference on the Applications of Evolutionary Computation (EvoStar). March 30 2016, Porto, Portugal.
- T12 *Devising Effective Novelty Search Algorithms: A Comprehensive Empirical Study*. Genetic and Evolutionary Computation Conference (GECCO). July 13 2015, Madrid, Spain.
- T11 *Hyb-CCEA: Cooperative Coevolution of Hybrid Teams*. Evolving Collective Behaviors in Robotics Workshop. July 11 2015, Madrid, Spain.
- T10 *Cooperative Coevolution of Partially Heterogeneous Multiagent Systems*. International Conference on Autonomous Agents & Multiagent Systems (AAMAS). May 7 2015, Istanbul, Turkey.
- T9 *Evolution of heterogeneous multirobot systems through behavioural diversity*. Doctoral Symposium of International Conference on Autonomous Agents & Multiagent Systems (AAMAS). May 5 2014, Paris, France.
- T8 *Avoiding Convergence in Cooperative Coevolution with Novelty Search*. International Conference on Autonomous Agents & Multiagent Systems (AAMAS). May 9 2014, Paris, France.
- T7 *Systematic Derivation of Behaviour Characterisations in Evolutionary Robotics*. International Conference on the Synthesis and Simulation of Living Systems (ALife). August 1 2014, New York City, USA.
- T6 *Diversity-based Coevolution of Behaviourally Heterogeneous Multirobot Systems*. Workshop on Nature-inspired Techniques for Robotics. September 13 2014, Ljubljana, Slovenia. **Best student presentation award**.
- T5 *Novelty Search in Competitive Coevolution*. Conference on Parallel Problem Solving from Nature (PPSN). September 16 2014, Ljubljana, Slovenia.
- T4 *Generic Behaviour Similarity Measures for Evolutionary Swarm Robotics*. Genetic and Evolutionary Computation Conference (GECCO). July 10 2013, Amsterdam, Netherlands.
- T3 *Introducing novelty search in evolutionary swarm robotics*. International Conference on Swarm Intelligence (ANTS). September 13 2012, Brussels, Belgium.
- T2 *A Land Use Identification and Visualization Tool Driven by OWL Ontologies*. OWL: Experiences and Directions (OWLED). May 27 2012, Heraklion, Greece.
- T1 *Introducing Novelty Search in Evolutionary Swarm Robotics*. LabMAg Seminar. March 14 2012, Lisbon, Portugal.

Publications

Research Gate: https://www.researchgate.net/profile/Jorge_Gomes10
 Google Scholar: <https://scholar.google.pt/citations?user=cCiaIMwAAAAJ>

International Journal Publications

Impact factors (IF) from the Thomson-Reuters 2016 Journal Citation Report, Science Edition

- IJ9 J. Gomes, P. Mariano, and A. L. Christensen (2019). "Challenges in cooperative coevolution of physically heterogeneous robot teams". In: *Natural Computing* 18 (1), pp. 29–46. **Invited paper** [IF 0.78]

- IJ8 J. Gomes, S. M. Oliveira, and A. L. Christensen (2018a). “An approach to evolve and exploit repertoires of general robot behaviours”. In: *Swarm and Evolutionary Computation* 43, pp. 265–283 [IF 7.73]
- IJ7 J. Gomes, P. Mariano, and A. L. Christensen (2018b). “Dynamic Team Heterogeneity in Cooperative Coevolutionary Algorithms”. In: *IEEE Transactions on Evolutionary Computation* 22 (6), pp. 934–948 [IF 10.63]
- IJ6 M. Duarte, J. Gomes, S. M. Oliveira, and A. L. Christensen (2018). “Evolution of repertoire-based control for robots with complex locomotor systems”. In: *IEEE Transactions on Evolutionary Computation* 22 (2), pp. 314–328 [IF 10.63]
- IJ5 J. Gomes, P. Mariano, and A. L. Christensen (2017). “Novelty-driven Cooperative Coevolution”. In: *Evolutionary Computation* 25 (2), pp. 275–307 [IF 3.83]
- IJ4 M. Duarte, V. Costa, J. Gomes, T. Rodrigues, F. Silva, S. M. Oliveira, and A. L. Christensen (2016b). “Evolution of Collective Behaviors for a Real Swarm of Aquatic Surface Robots”. In: *PLoS ONE* 11 (3), e0151834 [IF 2.80]
- IJ3 J. Gomes, P. Urbano, and A. L. Christensen (2014d). “PMCNS: Using a Progressively Stricter Fitness Criterion to Guide Novelty Search”. In: *International Journal of Natural Computing Research* 4, pp. 1–19. **Invited paper**
- IJ2 J. Gomes, P. Urbano, and A. L. Christensen (2013b). “Evolution of swarm robotics systems with novelty search”. In: *Swarm Intelligence* 7 (2–3), pp. 115–144 [IF 3.12]
- IJ1 N. Montenegro, J. Gomes, P. Urbano, and J. Duarte (2012). “A Land Use Planning Ontology: LBCS”. in: *Future Internet* 4 (1), pp. 65–82

International Conference Publications

Conference rankings from the CORE Conference Ranking 2017

- IC20 J. Gomes and A. L. Christensen (2018b). “Task-Agnostic Evolution of Diverse Repertoires of Swarm Behaviours”. In: *International Conference on Swarm Intelligence*. Springer, pp. 225–238 [CORE B]
- IC19 J. Gomes and A. L. Christensen (2018a). “Comparing approaches for evolving high-level robot control based on behaviour repertoires”. In: *IEEE Congress on Evolutionary Computation (CEC)*. IEEE, pp. 1–6. **Nominated for best paper** [CORE B]
- IC18 M. Duarte, J. Gomes, S. M. Oliveira, and A. L. Christensen (2016c). “EvoRBC: Evolutionary Repertoire-based Control for Robots with Arbitrary Locomotion Complexity”. In: *Genetic and Evolutionary Computation Conference (GECCO)*. ACM Press, pp. 93–100 [CORE A]
- IC17 M. Duarte, J. Gomes, V. Costa, T. Rodrigues, F. Silva, V. Lobo, M. Marques, S. M. Oliveira, and A. L. Christensen (2016a). “Application of Swarm Robotic Systems to Marine Environmental Monitoring”. In: *IEEE/MTS OCEANS*. IEEE Press
- IC16 M. Duarte, J. Gomes, V. Costa, S. M. Oliveira, and A. L. Christensen (2016d). “Hybrid Control for a Real Swarm Robotics System in an Intruder Detection Task”. In: *European Conference on the Applications of Evolutionary Computation (EvoApps)*. Springer, pp. 213–230
- IC15 J. Gomes, M. Duarte, P. Mariano, and A. L. Christensen (2016). “Cooperative Coevolution of Control for a Real Multirobot System”. In: *Parallel Problem Solving from Nature (PPSN)*. Springer, pp. 591–601. **Nominated for best paper** [CORE A]
- IC14 J. Gomes, P. Mariano, and A. L. Christensen (2015a). “Cooperative Coevolution of Morphologically Heterogeneous Robots”. In: *European Conference on Artificial Life (ECAL)*. MIT Press, pp. 312–319. **Nominated for best paper** [CORE B]
- IC13 J. Gomes, P. Mariano, and A. L. Christensen (2015c). “Devising Effective Novelty Search Algorithms: A Comprehensive Empirical Study”. In: *Genetic and Evolutionary Computation Conference (GECCO)*. ACM Press, pp. 943–950 [CORE A]
- IC12 J. Gomes, P. Mariano, and A. L. Christensen (2015b). “Cooperative Coevolution of Partially Heterogeneous Multiagent Systems”. In: *International Conference on Autonomous Agents & Multiagent Systems (AAMAS)*. IFAAMAS, pp. 297–305 [CORE A*]
- IC11 A. L. Christensen, S. Oliveira, O. Postolache, M. J. de Oliveira, S. Sargento, P. Santana, L. Nunes, F. Velez, P. Sebastiao, V. Costa, M. Duarte, J. Gomes, T. Rodrigues, and F. Silva (2015). “Design of Communication and Control for Swarms of Aquatic Surface Drones”. In: *Proceedings of the International Conference on Agents and Artificial Intelligence (ICAART)*. SCITEPRESS, Lisbon, Portugal, pp. 548–555 [CORE C]
- IC10 J. Gomes, P. Mariano, and A. Christensen (2014c). “Novelty Search in Competitive Coevolution”. In: *Parallel Problem Solving from Nature (PPSN)*. vol. 8672. LNCS. Springer, pp. 233–242 [CORE A]

- IC9 J. Gomes, P. Mariano, and A. L. Christensen (2014e). “Systematic Derivation of Behaviour Characterisations in Evolutionary Robotics”. In: *International Conference on the Synthesis and Simulation of Living Systems (ALife)*. MIT Press, pp. 212–219 [CORE A]
- IC8 J. Gomes, P. Mariano, and A. L. Christensen (2014a). “Avoiding Convergence in Cooperative Coevolution with Novelty Search”. In: *International Conference on Autonomous Agents & Multiagent Systems (AAMAS)*. IFAAMAS, pp. 1149–1156 [CORE A*]
- IC7 J. Gomes and A. L. Christensen (2013). “Generic Behaviour Similarity Measures for Evolutionary Swarm Robotics”. In: *Genetic and Evolutionary Computation Conference (GECCO)*. ACM Press, pp. 199–206. **Nominated for best paper** [CORE A]
- IC6 J. Gomes, F. Silva, and T. Chambel (2013c). “Genetic Soundtracks: Creative Matching of Audio to Video”. In: *International Conference on Digital Arts (ARTECH)*. ARTECH International, pp. 349–352
- IC5 J. Gomes, P. Urbano, and A. L. Christensen (2012d). “Progressive Minimal Criteria Novelty Search”. In: *Ibero-American Conference on Artificial Intelligence (IBERAMIA)*. vol. 7637. LNAI. Springer, pp. 281–290
- IC4 J. Gomes, P. Urbano, and A. L. Christensen (2012c). “Introducing novelty search in evolutionary swarm robotics”. In: *International Conference on Swarm Intelligence (ANTS)*. Springer, pp. 85–96 [CORE B]
- IC3 J. Gomes, M. B. Carmo, and A. P. Cláudio (2011b). “Virtual Exhibition Builder”. In: *International Conference on Computer Graphics Theory and Applications (GRAPP)*, pp. 330–333 [CORE B]
- IC2 N. Montenegro, J. Gomes, P. Urbano, and J. Duarte (2011a). “An OWL2 land use ontology: LBCS”. in: *Computational Science and Its Applications (ICCSA)*. Springer, pp. 185–198 [CORE C]
- IC1 N. Montenegro, J. Gomes, P. Urbano, and J. Duarte (2011b). “GIS-Semantic Tool for Urban Intervention Areas”. In: *Virtual City and Territory Congress (TVCT)*

Peer-reviewed Workshop Publications

- WS7 M. Duarte, V. Costa, J. Gomes, T. Rodrigues, F. Silva, S. M. Oliveira, and A. L. Christensen (2016e). “Unleashing the Potential of Evolutionary Swarm Robotics in the Real World”. In: *Genetic and Evolutionary Computation Conference Companion (GECCO)*. ACM Press, pp. 159–160
- WS6 J. Gomes, P. Mariano, and A. L. Christensen (2015d). “Hyb-CCEA: Cooperative Coevolution of Hybrid Teams”. In: *Genetic and Evolutionary Computation Conference Companion (Evolving Collective Behaviors in Robotics Workshop)*. ACM Press, pp. 1251–1252
- WS5 J. Gomes, P. Mariano, and A. L. Christensen (2014b). “Diversity-based Coevolution of Behaviourally Heterogeneous Multirobot Systems”. In: *Workshop on Nature-inspired Techniques for Robotics at PPSN*
- WS4 J. Gomes (2014). “Evolution of heterogeneous multirobot systems through behavioural diversity”. In: *International Conference on Autonomous Agents & Multiagent Systems (AAMAS)*. IFAAMAS, pp. 1729–1730
- WS3 J. Gomes, P. Urbano, and A. L. Christensen (2013a). “Diverse Behaviors in Swarm Robotics with Novelty Search”. In: *International Conference on the Synthesis and Simulation of Living Systems (ALife)*. Extended abstract. MIT Press, pp. 553–554
- WS2 J. Gomes, N. Montenegro, P. Urbano, and J. Duarte (2012b). “A Land Use Identification and Visualization Tool Driven by OWL Ontologies”. In: *OWL: Experiences and Directions (OWLED)*
- WS1 J. Gomes, P. Urbano, N. Montenegro, and J. Duarte (2012a). “A computer-aided urban planning tool driven by semantic web ontologies”. In: *7th Iberian Conference on Information Systems and Technologies (CISTI)*. IEEE Press

Thesis & Technical Reports

- TR3 J. Gomes (2017). “Novel Approaches to Cooperative Coevolution of Heterogeneous Multiagent Systems”. PhD thesis. Faculdade de Ciências da Universidade de Lisboa
- TR2 J. Gomes (2012). “Evolution of Self-organising Behaviours with Novelty Search”. MA thesis. Faculdade de Ciências da Universidade de Lisboa
- TR1 J. Gomes, M. B. Carmo, and A. P. Cláudio (2011a). *Creating and Assembling Virtual Exhibitions from Existing X3D Models*. Tech. rep. TR-2011-4. Departamento de Informática, Faculdade de Ciências da Universidade de Lisboa

National Publications

- NP1 J. Gomes, M. B. Carmo, and A. P. Cláudio (2010). “Construção Interactiva de Exposições Virtuais”. In: *INForum - Simpósio de Informática*, pp. 305–316

Peer-reviewed Videos

VD1 A. L. Christensen, M. Duarte, V. Costa, T. Rodrigues, J. Gomes, F. Silva, and S. M. Oliveira (2016). "A Sea of Robots". In: *AAAI Conference on Artificial Intelligence*. AAAI Press. URL: <https://www.youtube.com/watch?v=JBrkszUnms8>. **Best robot video award** [CORE A*]

Press Coverage

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