

OLA'2020 is organized by

- Universidad de Cádiz (Spain)
- Université de Lille (France)
- INRIA (France)

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- Prof. Pascal Bouvry (University of Luxembourg, Luxembourg)
- Prof. Farouk Yalaoui (University of Technology of Troyes, France)

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- Farouk Yalaoui (University of Technology of Troyes, France)
- Xin-She Yang (Middlesex University London, UK)
- Martin Zaeferrer (TH Köln University of Applied Sciences, Germany)
- Nicolas Zufferey (University of Geneva, Switzerland)

Invited keynotes

1. **Operations research in Industry 4.0: from ideas to applications**, Prof. Hicham Chehade (Opta-LP, France)
2. **Deep learning and large scale optimization**, Prof. Amir Nakib (Univ. Paris Est, France)

Special sessions

1. **"Artificial Intelligence in Games"**, organized by Dr. Pablo García-Sánchez (University of Cadiz, Spain), Dr. Manuel Jesús Cobo (University of Cadiz, Spain), and Dr. Antonio Miguel Mora (University of Granada, Spain).
2. **"Metaheuristics & learning"**, organized by Prof. Jesica de Armas (University Pompeu Fabra, Spain).
3. **"Learning and optimization in cybersecurity"**, organized by Dr. Roberto Magán-Carrión (University of Cadiz, Spain), Dr. Ángel Ruíz-Zafra (University of Cadiz, Spain), and Dr. Daniel Urda (University of Cadiz, Spain).
4. **"Computational intelligence for smart cities"**, organized by Prof. Sergio Nesmachnow (University of the Republic, Uruguay), Dr. Jamal Toutouh (Massachusetts Institute of Technology, USA), Dr. Luis Hernández (University of Valladolid, Spain), and Renzo Massobrio (University of the Republic, Uruguay).

5. **"Artificial intelligence for health applications"**, organized by Dr. Farah Chehade (University of Technology of Troyes, France), and Dr. Stéphane Sanchez (Centre Hospitalier de Troyes).

6. **"Hyper-Heuristics and their Applications"**, organized by Gabriel Duflo (University of Luxembourg, Luxembourg), Emmanuel Kieffer (University of Luxembourg, Luxembourg), and Dr. Grégoire Danoy (University of Luxembourg, Luxembourg).

7. **"Intelligent systems and energy"**, organized by Dr Taha Arbaoui (University of Technology of Troyes, France), Prof. Alice Yalaoui (University of Technology of Troyes, France), and Dr. Mohsen Aghelinejad (University of Technology of Troyes, France).

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Conference location: Edificio Constitución 1812 – Cádiz20

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Program at a glance

February 17th

8h30	Registration and Opening (Dr. B. Dorronsoro & Prof. E-G. Talbi)	
9h30	Session Continuous and discrete Optimization (chair: Prof. R. Ellaia)	
10h50	Coffee Break	
11h20	Invited keynote Deep learning and large scale optimization (chair: B. Dorronsoro) Prof. Amir Nakib (University of Paris-Est, France)	
12h20	Lunch	
14h00	Session Optimization for learning 1 (chair: Dr. R. Santana)	Session Transportation (chair: H. Chehade)
15h20	Coffee Break	
15h50	Session Learning (chair: Prof. S. Nesmachnow)	Session Health (chair: Dr. J. Chrusciel)

February 18th

9h30	Session Learning for optimization 1 (chair: Prof. A. Nowé)	
10h50	Coffee Break	
11h20	Invited keynote Operations research for Industry 4.0: From ideas to applications (chair: Prof. F. Yalaoui) Prof. Hicham Chehade (Opta-LP, France)	
12h20	Lunch	
14h00	Session Optimization for learning 2 (chair: Prof. A. Berrado)	Session Scheduling (chair: Prof. A. Yalaoui)
15h20	Coffee Break	
15h50	Session Security & Games (chair: Dr. Roberto Magán-Carrión)	Session Logistics & Planning (chair: Prof. F. Yalaoui)
17h10	End of Session	
20h30	Gala Dinner	

February 19th

9h30	Session Parallel and cooperative optimization and learning (chair: Prof. N. Melab)	
10h50	Coffee Break	
11h20	Session Learning for optimization 2 (chair: Dr. B. Dorronsororo)	Session Energy-aware optimization (chair: Dr. T. Arbaoui)
12h20	Conference Closing	

Detailed program: Monday, February 17th

8h30 - 9h10 Registration

9h10 - 9h30 Opening Session – Room Bolivar

Dr. Bernabé Dorronsoro & Prof. El-Ghazali Talbi

9h30 - 10h50

Room Bolivar - Session **Continuous and discrete optimization** (chair: Prof. R. Ellaia)

- *An efficient chaotic optimization algorithm*
Nassime Aslimani, El-Ghazali Talbi, Rachid Ellaia
- *Comparison between stochastic gradient descent and VLE metaheuristic for optimizing matrix factorization*
Juan A. Gomez-Pulido, Enrique Cortés-Toro, Arturo Durán-Domínguez, José M. Lanza-Gutiérrez, Broderick Crawford, Ricardo Soto
- *A capacity-enhanced local search for the 5G cell switch-off problem*
Francisco Luna, Pablo H. Zapata-Cano, Ángel Palomares-Caballero, Juan F. Valenzuela-Valdés
- *Clustering a 2d Pareto Front: p -center problems are solvable in polynomial time*
Nicolas Dupin, Frank Nielsen, Talbi El-ghazali

10h50 - 11h20 – Coffee break

11h20 - 12h20

Room Bolivar - Invited Keynote **Deep learning and large scale optimization**

(chair: Dr. B. Dorronsoro)

Prof. Amir Nakib (Univ. Paris Est, France)

12h20 - 14h00 LUNCH

Room Bolivar - Session Optimization for learning 1 (chair: Dr. R. Santana)

- *Evolving a Deep Neural Network Training Time Estimator*
Frederic Pinel, Jian-xion Yin, Christian Hundt, Emmanuel Kieffer, Sébastien Varrette, Pascal Bouvry, Simon See
- *Optimization methods for discretizing continuous attributes based on moment matching*
MAISSAE HADDOUCHI, Abdelaziz Berrado
- *Hybrid Descriptor Optimization for Face Recognition*
Hocine Elaggoune, Mebarka Belahcene, Salah Bourennane
- *Automatic Structural Search for Multi-Task Learning VALPs*
Unai Garciaarena, Roberto Santana, Alexander Mendiburu

Room Argüelles - Session Transportation (chair: Dr. Hicham Chehade)

- *Estimating the effects of zone assignment on vehicle routing problem*
Soma Toki, Naoshi Shiono
- *Intelligent Electric Drive Management for Plug-in Hybrid Buses*
Patricia Ruiz, Aarón Arias, Renzo Massobrio, Juan Carlos de la Torre, Marcin Seredynski, Bernabe Dorronsoro
- *A heuristic algorithm for the set k-cover problem*
Amir Salehipour
- *MineReduce for the minimum weight vertex cover problem*
Marcelo Maia, Alexandre Plastino, Uéverton Souza

Room Bolivar - Session Learning (chair: Prof. Sergio Nesmachnow)

- *Computational intelligence for evaluating the air quality in the center of Madrid, Spain*
Toutouh Jamal, Irene Lebrusan, Sergio Nesmachnow
- *Intelligent System for the Reduction of Injuries in Archery*
Christian Cintrano, Javier Ferrer, Enrique Alba
- *Learning Patterns for Complex Event Detection in Robot Sensor Data*
Bernhard Humm, Marco Hutter
- *Increase students' motivation, Digital Escape Classroom*
Diego Cano Sibón, Milagros Huerta Gómez de Merodio, José María Portela Núñez

Room Argüelles - Session **Health** (chair: Dr. Jan Chrusciel)

- *Predicting hospital waiting times using a generalized stochastic petri net model*
ibtissem chouba, lionel amodeo, Farouk Yalaoui, Taha Arbaoui, Stéphane Sanchez, David Laplanche
- *Mathematical model for food production scheduling in hospital catering*
Fatima Abderrabi
- *Clustering large health dataset to determine patients proles based on ICD10 diagnosis*
Adrien Wartelle, Farad Mourad-Cehade, Farouk Yalaoui, David Laplanche, Stéphane Sanchez
- *A new mathematical formulation for chemotherapy scheduling*
Quoc Nhat Han Tran, Hicham Chehade, Nhan Quy Nguyen, David Laplanche, Stéphane Sanchez, Rezvan Sadeghi, Frédéric Dugardin

Detailed program: Tuesday, February 18th

9h30 - 10h50

Room Bolivar - Session **Learning for optimization 1** (chair: Prof. Ann Nowé)

- *A Q-Learning Hyper-Heuristic for UAV Swarming*
Gabriel Duflo, Grégoire Danoy, El-Ghazali Talbi, Pascal Bouvry
- *Multi-Agent Reinforcement Learning Tool for Job Shop Scheduling Problems*
Yailen Martínez Jiménez, Jessica Coto Palacio, Ann Nowé
- *Bayesian Optimization of Gaussian Process and Deep Gaussian Process for the optimization of black-box functions*
Jérémy Sadet, Franck Massa, El-Ghazali Talbi, Thierry Tison, Isabelle Turpin
- *Decentralized Energy Management Systems for Microgrids: When Optimization meets Machine Learning*
Mohamed Saâd El Harrab, Michel Nakhla

10h50 - 11h20 – Coffee break

11h20 - 12h20

Room Bolivar - Invited Keynote **Operations research for Industry 4.0: From ideas to Applications**
(chair: Prof. F. Yalaoui)

Prof. Hicham Chehade (Opta-LP, France)

12h20 - 14h00 LUNCH

14h00 - 15h20

Room Bolivar - Session **Optimization for learning 2** (chair: Prof. Abdelaziz Berrado)

- *Breast Cancer Diagnostic Tool Using Deep Feed Forward Neural Network and Mother Tree Optimization*
Wael korani, Malek Mouhoub
- *An optimization approach for postprocessing PRIM's rules using the Genetic Algorithm*
Rym Nassih, Abdelaziz Berrado
- *Demystifying Batch Normalization: Analysis of Normalizing Layer Inputs in Neural Networks*
Dinko Franceschi, Jun Hyek Jang
- *Learning to compute inner consensus. A novel approach to modeling agreement between Capsules*
Gonçalo Faria

Room Argüelles - Session **Logistics and Planning** (chair: Prof. Farouk Yalaoui)

- *Designing a Flexible Evaluation of Container Loading Using Physics Simulation*
Shuhei Nishiyama, Chonho Lee, Tomohiro Mashita
- *A mathematical model for three-dimensional open dimension packing problem with product stability constraints*
Cong Tan Trinh Truong, Lionel amodeo, Farouk Yalaoui
- *Designing a Flexible Evaluation of Container Loading Using Physics Simulation*
Shuhei Nishiyama, Chonho Lee, Tomohiro Mashita
- *Resources allocation via an hybrid method machine learning - optimization in containers context*
Etienne Leclercq
- *A deterministic short-term hydropower optimization formulation*
Maissa Daadaa, Sara Séguin, Miguel.F Anjos, Kenjy Demmester

15h20 - 15h50 – Coffee break

15h50 - 17h10

Room Bolivar - Session **Security and games** (chair: Dr. Roberto Magán-Carrión)

- *Towards the integration of security solutions: swarm intelligence for resilient Mobile Ad hoc Networks*
Roberto Magán-Carrión, Ángel Ruíz-Zafra, Daniel Urda
- *A distributed digital object architecture to support secure IoT ecosystems*
Angel Ruiz-Zafra, Roberto Magan-Carrion
- *Checking the difficulty of evolutionary-generated maps in a N-Body inspired mobile game*
Carlos López-Rodríguez, Antonio J. Fernández-Leiva, Raúl Lara-Cabrera, Antonio M. Mora, Pablo García-Sánchez
- *A framework to create conversational agents for the development of video games by end-users*
Rubén Baena Perez, Iván Ruiz-Rube, Juan Manuel Doderó, Miguel Angel Bolivar

Room Argüelles - Session **Scheduling** (chair: Dr. Alice Yalaoui)

- *Semi-online Scheduling For Minimizing The Total Completion Time: Information Value*
Hajar Nouinou, Taha Arbaoui, Alice Yalaoui
- *Service System Optimization with Flexible Servers and Priority Customers*
Rowan Wang
- *An Efficient Data Structure For Unrelated Parallel Machine Scheduling in Distributed Manufacturing Systems*
Söhnke Maecker, Liji Shen, Bahram Alidaee, Haibo Wang
- *Unrelated parallel machines scheduling with setup times in textile industry*
Alice Berthier, Hicham Chehade, Alice Yalaoui, Farouk Yalaoui, Lionel amodeo, Christian Bouillot

20h30 Gala Dinner

Detailed program: Wednesday, February 19th

9h30 - 10h50

Room Bolivar - Session **Parallel and cooperative optimization and learning** (chair: Prof. N. Melab)

- *Towards Dynamic Selection of Evolution Controls in Parallel Bayesian Neural Network-assisted Genetic Algorithm*
Guillaume Briffoteaux, Romain Ragonnet, Mohand Mezmaç, Nouredine Melab, Daniel Tuytens
- *Towards Adaptive Space Partitioning for Large-scale Parallel Bayesian Optimization*
Maxime Gobert, Jan Gmys, Nouredine Melab, Daniel Tuytens
- *Comparison of high-productivity languages for parallel metaheuristics*
Jan Gmys, Tiago Carneiro, Nouredine Melab, El-Ghazali Talbi, Daniel Tuytens
- *Optimizing the Performance of an Unpredictable UAV Swarm for Intruder Detection*
Daniel H. Stolfi, Matthias R. Brust, Grégoire Danoy, Pascal Bouvry

10h50 - 11h20 – Coffee break

11h20 - 12h20

Room Bolivar - Session **Learning for optimization 2** (chair: Dr. B. Dorronsoro)

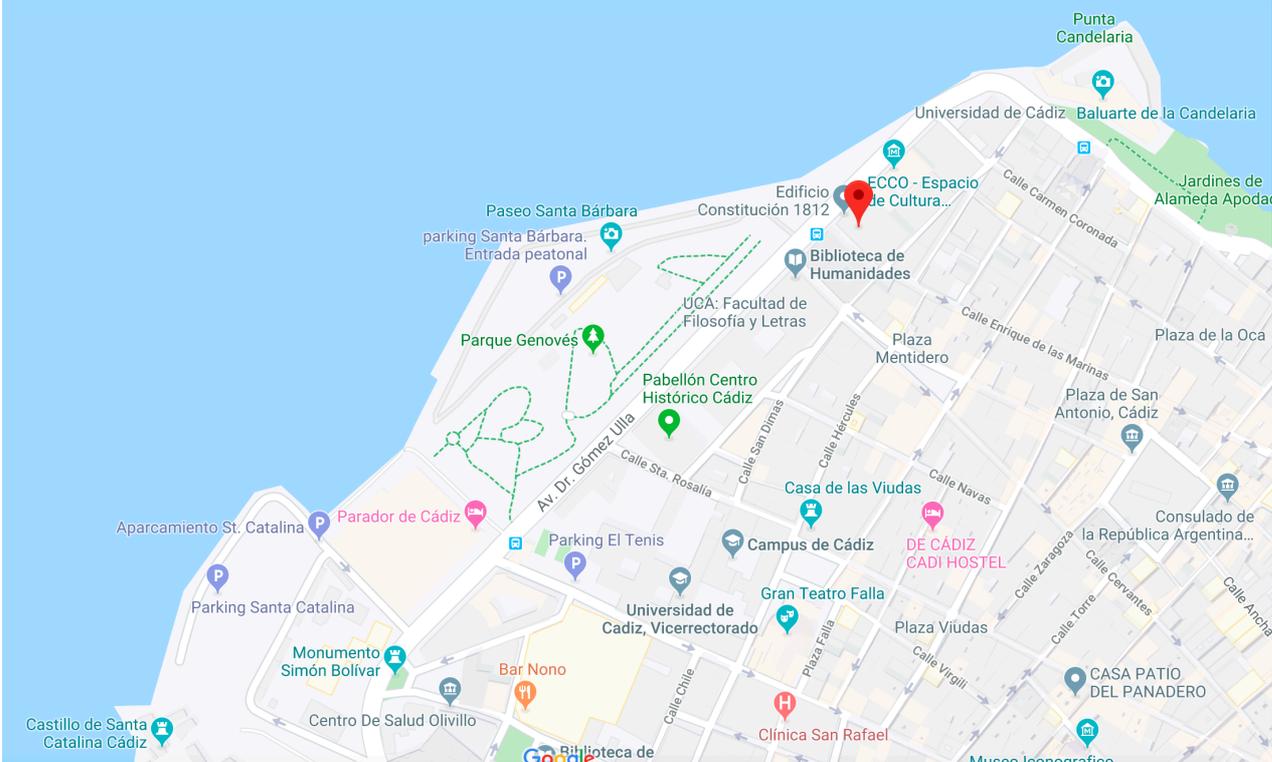
- *Learning variables structure using evolutionary algorithms to improve predictive performance*
Damian Nimo-Jarquez, Bernabe Dorronsoro, Ignacio J. Turias, Daniel Urda
- *Container demand forecasting at border posts of ports: a hybrid SARIMA-SOM-SVR approach*
J. Jesús Ruiz-Aguilar, Daniel Urda, J. Antonio Moscoso-López, J. González-Enrique, Ignacio Turias
- *Forecasting waste generation and recycling rates for operational planning using machine learning approaches*
Maximiliano Cubillos, Sanne Wøhlk, Jesper Wulff

Room Argüelles - Session **Energy-aware applications** (chair: Dr. T. Arbaoui)

- *Preventing Overloading Incidents on Smart Grids: A Multiobjective Combinatorial Optimization Approach*
Nikolaos Antoniadis, Maxime Cordy, Angelo Sifaleras, Yves Le Traon
- *Optimization of electricity cost in two-machine flow shop scheduling under Time-of-Use tariffs and optimal makespan*
Minh Hung Ho, Faicel Hnaien, Frederic Dugardin
- *Analysis of data generated by an automated platform for aggregation of distributed energy resources*
Juan Aguilar Guisado, Alicia Arce

Conference location: Edificio Constitución 1812 – Cádiz

OLA 2020 will take place in Edificio Constitución 1812 (also known as "La Bomba"), University of Cadiz, with address in Paseo Carlos III, number 3, Cadiz, Spain.



Organizers

