



**14th International Conference on Hybrid Artificial Intelligent Systems HAIS 2019**

**<http://2019.haisconference.eu>**

**León, Spain**

**September 4th-6th**

# PROGRAMME

	Wed. 4		Thu. 5		Fri. 6	
ROOM	Room "Salón de Grados"	Room 2	Room "Salón de Grados"	Room 2	Room "Salón de Grados"	Room 2
8:00	Registration (open the whole day)		Registration (open the whole day)		Registration (open the whole day)	
9:00-10:00	Session 1.1: Data Mining Applications I	Session 1.2: Visual Analysis & Advanced Data Processing Techniques	Session 2.1: Learning Algorithms	Session 2.2: Bio-inspired Models and Evolutionary Computation I	Registration (open the whole day)	
10:00-11:00					Session 3.1: Bio-inspired Models and Evolutionary Computation II	Session 3.2: Hybrid Intelligent Applications II
11:00-11:30	Coffee break		Coffee break		Coffee break	
11:30-12:30	OPENING (SALÓN DE GRADOS) with the Rector of the University of León and the Major of the city. Invited Talk D. Alberto Hernández (Director General INCIBE)		Invited Talk Prof. André Carvahlo (SALÓN DE GRADOS)		Session 3.3: Data Mining, Knowledge Discovery and Big Data	Session 3.4: Hybrid Intelligent Applications III
12:30-13:30	Invited Talk Prof. Pedro Larrañaga (SALÓN DE GRADOS)		Session 2.3: Data Mining Applications II	Session 2.4: Hybrid Intelligent Applications I		
14:00-16:00	Lunch		Lunch		Lunch	
16:30-17:30	Free time		Free time			
17:30-19:30	S. Isidoro + León Walking Tour (17:15h Meeting Point at Hotel Colegiata San Isidoro)		Cathedral + City Tour (17:15h Meeting Point at Hotel Colegiata San Isidoro)			
19:30	Official reception in the León Town Hall (Ayuntamiento de León)		Official reception in the León Provincial Council (Diputación de León)			
21:00	Spanish wine and dinner with tapas in the Camarote Madrid Hotel		Gala Dinner (Hotel Colegiata San Isidoro)			

## PAPERS PER SESSION

Wed. 4	
Salón de Grados	Room 2
Session 1.1: Data Mining Applications I (9:00-11:00)	Session 1.2: Visual Analysis & Advanced Data Processing Techniques (9:00-11:00)
27	12
33	13
49	78
56	23
68	39
73	43
75	55
	66

Thu. 5	
Salón de Grados	Room 2
Session 2.1: Learning Algorithms (9:00-11:00)	Session 2.2: Bio-inspired Models and Evolutionary Computation I (9:00-11:00)
5	8
7	11
21	15
42	22
50	26
58	29
89	40
38	46
Session 2.3: Data Mining Applications II (12:30-13:30)	Session 2.4: Hybrid Intelligent Applications I (12:30-13:30)
2	10
6	19
17	44
20	69

Fri. 6	
Salón de Grados	Room 2
Session 3.1: Bio-inspired Models and Evolutionary Computation II (10:00-11:00)	Session 3.2: Hybrid Intelligent Applications II (10:00-11:00)
54	70
63	72
62	74
64	14
Session 3.3: Data Mining, Knowledge Discovery and Big Data (11:30-13:30)	Session 3.4: Hybrid Intelligent Applications III (11:30-13:30)
18	79
45	82
48	87
65	83
71	28
76	16
80	24

**Session 1.1: Data Mining Applications****Wednesday September 4th 9:00-11:00****Room Salón de Grados****Chairman: Manuel Castejón Limas**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>27</b>	Inferring knowledge from clinical data for anesthesia automation.	Jose Manuel Gonzalez-Cava, Iván Castilla-Rodriguez, José Antonio Rebozo, Ana León, María Martín Lorenzo, Esteban Jove, Jose Luis Calvo-Rolle and Juan Albino Mendez-Perez
<b>33</b>	A machine learning approach to determine abundance of inclusions in stainless steel	Hector Mesa, Daniel Urda, Juan Jesus Ruiz Aguilar, Jose Antonio Moscoso Lopez, Juan Almagro, Patricia Acosta and Ignacio J. Turias
<b>49</b>	Measuring Lower Limb Alignment and Joint Orientation Using Deep Learning Based Segmentation of Bones	Kamil Kwolek, Adrian Brychcy, Bogdan Kwolek and Wojciech Murczynski
<b>56</b>	Constraint Programming based Algorithm for Solving Large-Scale Vehicle Routing Problems	Bochra Rabbouch, Foued Saadaoui and Rafea Mraih
<b>68</b>	Application of extractive text summarization algorithms to speech-to-text	Rubel Biswas, Eduardo Fidalgo Fernandez, Domínguez M. Víctor, Enrique Alegre and Laura Fernández-Robles
<b>73</b>	User profiles matching for different social networks based on faces identification	Timur Sokhin, Nikolay Butakov and Denis Nasonov
<b>75</b>	Ro-Ro Freight Prediction using a hybrid approach based on Empirical Mode Decomposition, Permutation Entropy and Artificial Neural Networks	José Antonio Moscoso-López, Juan Jesus Ruiz Aguilar, Javier González-Enrique, Daniel Urda, Hector Mesa and Ignacio Turias

**Session 1.2: Visual Analysis & Advanced Data Processing Techniques****Wednesday September 4th, 9:00-11:00****Room 2****Chairman: Víctor González Castro**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>12</b>	Convolutional CARMEN: tomographic reconstruction for night observation	Francisco García Riesgo, Sergio Luis Suárez Gómez, Fernando Sánchez Lasheras, Carlos González Gutiérrez, Carmen Peñalver San Cristóbal and Francisco Javier de Cos Juez
<b>13</b>	Multivariate Time Series clustering using Recurrent Neural Networks	Iago Vazquez, José Ramón Villar, Javier Sedano, Svetlana Simic and Enrique de la Cal
<b>78</b>	Combining Random Subspace approach with SMOTE oversampling for imbalanced data classification	Paweł Ksieniewicz
<b>39</b>	The Contract Random Interval SpectralEnsemble (c-RISE): the effect of contracting a classifier on accuracy	Michael Flynn, James Large and Anthony Bagnall
<b>43</b>	Graph-Based Knowledge Inference For Style-Directed Architectural Design	Agnieszka Mars, Ewa Grabska, Grażyna Ślusarczyk and Barbara Strug
<b>55</b>	A Convex Formulation of SVM-based Multi-Task Learning	Carlos Ruiz, Carlos Alaíz and José Dorronsoro
<b>66</b>	Influence Maximization and Extremal Optimization	Tamás Képes, Noémi Gaskó, Rodica Ioana Lung and Mihai Suciú
<b>23</b>	Deep Structured Semantic Model for Recommendations in E-commerce	Anna Larionova, Polina Kazakova and Nikita Nikitinsky

## Session 2.1: Learning Algorithms

Thursday September 5th, 9:00-11:00

Room Salón de Grados

Chairman: Agnieszka Mars

ID	Title	Authors
5	Evaluating Strategies for Selecting Test Datasets in Recommender Systems	Francisco Pajuelo-Holguera, Juan A. Gómez-Pulido and Fernando Ortega
7	Use of Natural Language Processing to Identify Inappropriate Content in Text	Sergio Merayo-Alba, Eduardo Fidalgo, Víctor González-Castro, Rocío Alaiz-Rodríguez and Javier Velasco-Mata
21	Classification of Human Driving Behaviour Images using Convolutional Neural Network Architecture	Emine Cengil and Ahmet Cinar
42	BUILDING A CLASSIFICATION MODEL USING AFFINITY PROPAGATION	Christopher Klecker and Ashraf Saad
50	Clustering-based ensemble pruning and multistage organization using diversity	Pawel Zyblewski and Michal Wozniak
58	Towards a custom designed mechanism for indexing and retrieving video transcripts	Gabriel Turcu, Stella Heras, Javier Palanca, Vicente Julian and Marian Cristian Mihaescu
38	A Novel Density-based Clustering Approach for Outlier Detection in High-dimensional Data	Thouraya Aouled Messaoud, Abir Smiti and Aymen Louati
89	Texture descriptors for automatic estimation of workpiece quality in milling	Manuel Castejon Limas, Lidia Sánchez-González, Javier Diez-Gonzalez, Laura Fernández-Robles, Virginia Riego Del Castillo and Hilde Perez

**Session 2.2: Bio-inspired Models and Evolutionary Computation I****Thursday September 5th, 9:00-11:00****Room 2****Chairman: Bogdan Kwolek**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>8</b>	Improving comparative radiography by multi-resolution 3D-2D evolutionary image registration	Óscar David Gómez López, Oscar Ibáñez, Andrea Valsecchi and Oscar Cordon
<b>11</b>	Evolutionary algorithm for pathways detection in GWAS studies.	Fidel Diez Diaz, Fernando Sánchez Lasheras, Francisco Javier de Cos Juez and Vicente Martín Sánchez
<b>15</b>	Particle Swarm Optimization-based CNN-LSTM Networks for Anomalous Query Access Control in RBAC-Administered Model	Tae-Young Kim and Sung-Bae Cho
<b>22</b>	d(Tree)-by-dx: Automatic and Exact Differentiation of Genetic Programming Trees	Peter Rockett, Yuri Kaszubowski Lopes, Tiantian Dou and Elizabeth A Hathway
<b>26</b>	Genetic Algorithm-based Deep Learning Ensemble for Detecting Database Intrusion via Insider Attack	Seok-Jun Bu and Sung-Bae Cho
<b>29</b>	An efficient hybrid genetic algorithm for solving a particular two-stage fixed-charge transportation problem	Ovidiu Cosma, Petrica Pop and Cosmin Sabo
<b>40</b>	Analysis of MOEA/D Approaches for Inferring Ancestral Relationships	Sergio Santander-Jiménez, Miguel A. Vega-Rodríguez and Leonel Sousa
<b>46</b>	Parsimonious modeling for estimating hospital cooling demand to reduce maintenance costs and power consumption	Eduardo Dulce and Francisco Javier Martinez-de-Pison

**Session 2.3: Data Mining Applications II****Thursday September 5th, 12:30-13:30****Room Salón de Grados****Chairman: Camino Fernández Llamas**

ID	Title	Authors
2	Forecast Daily Air-Pollution Time Series with Deep Learning	Miguel Cárdenas Montes
6	Botnet Detection on TCP Traffic Using Supervised Machine Learning	Javier Velasco-Mata, Eduardo Fidalgo, Víctor González-Castro, Enrique Alegre and Pablo Blanco-Medina
17	Classifying Pastebin content through the generation of PasteCC labeled dataset	Adrián Riesco, Eduardo Fidalgo, Mhd Wesam Al-Nabki, Francisco Jáñez-Martino and Enrique Alegre
20	Network traffic analysis for Android malware detection	José Gaviria de La Puerta, Iker Pastor-López, Borja Sanz and Pablo G. Bringas

**Session 2.4: Hybrid Intelligent Applications I****Thursday September 5th, 12:30-13:30****Room 2****Chairman: Francisco Javier Martínez de Pison Ascacibar**

ID	Title	Authors
10	Modeling a Mobile Group Recommender System for Tourism with Intelligent Agents and Gamification	Patrícia Alves, João Carneiro, Goreti Marreiros and Paulo Novais
19	Orthogonal Properties of Asymmetric Neural Networks with Gabor Filters	Naohiro Ishii, Toshinori Deguchi, Masashi Kawaguchi, Hiroshi Sasaki and Tokuro Matsuo
44	Deep CNN-based Recognition of JSL Finger Spelling	Nam Tu Nguen, Shinji Ssako and Bogdan Kwolek
69	Algorithm for constructing a classifier team using a modified PCA (principal component analysis) in the task of diagnosis of acute lymphocytic leukaemia type B-CLL	Mariusz Topolski and Katarzyna Topolska



**Session 3.1: Bio-inspired Models and Evolutionary Computation II****Friday September 6th, 10:00-11:00****Room Salón de Grados****Chairman: Rocío Aláiz Rodríguez**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>54</b>	Haploid versus diploid genetic algorithms. A comparative study.	Adrian Petrovan, Petrica Pop-Sitar and Oliviu Matei
<b>63</b>	Entropy and Organizational Performance	José Neves, Nuno Maia, Goreti Marreiros, Mariana Neves, Ana Fernandes, Jorge Ribeiro, Isabel Araújo, Nuno Araújo, Liliana Ávidos, Filipa Ferraz, António Capita, Nicolás Lori, Victor Alves and Henrique Vicente
<b>62</b>	A semi-supervised method to classify educational videos	Alexandru Stefan Stoica, Stella Heras, Javier Palanca, Vicente Julian and Marian Cristian Mihaescu
<b>64</b>	New Approach for the Aesthetic Improvement of Images Through the Combination of Convolutional Neural Networks and Evolutionary Algorithms	Juan Abascal, Miguel A. Patricio, Antonio Berlanga and Jose M. Molina

**Session 3.2: Hybrid Intelligent Applications II****Friday September 6th, 10:00-11:00****Room 2****Chairman: Ángel Manuel Guerrero Higuera**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>70</b>	Road Lane Landmark Extraction: A state-of-the-art review	Asier Izquierdo, Jose Manuel Lopez-Guede and Manuel Grana
<b>72</b>	CAPAS: A context-aware system architecture for physical activities monitoring	Paulo Ferreira, Leandro Freitas, Pedro Henriques, Paulo Novais and Juan Pavón
<b>74</b>	Anomaly Detection using Gaussian Mixture Probability Model to implement Intrusion Detection Systems	Roberto Blanco, Pedro Malagón, Samira Briongos and Jose M. Moya
<b>14</b>	On the influence of admissible orders in IVOVO	Mikel Uriz, Daniel Paternain, Humberto Bustince and Mikel Galar

**Session 3.3: Data Mining, Knowledge Discovery and Big Data****Friday September 6th, 11:30-13:30****Room Salón de Grados****Chairman: Barbara Strug**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>18</b>	Testing Modified Confusion Entropy as split criterion for decision trees	J. David Nuñez-Gonzalez, Alexander Gonzalo de Sá and Manuel Grana
<b>45</b>	Generating a Question Answering System from Text Causal Relations	Eduardo C. Garrido Merchán, Cristina Puente and José Ángel Olivas
<b>48</b>	Creation of a distributed NoSQL database with distributed hash tables	Agustín San Román Guzmán, Diego Valdeolmillos, Alberto Rivas, Angélica González Arrieta and Pablo Chamoso
<b>65</b>	Study of data pre-processing for short-term prediction of heat exchanger behaviour using time series	Bruno Baruque, Esteban Jove, Santiago Porras Alfonso and Jose Luis Calvo-Rolle
<b>71</b>	Can automated smoothing significantly improve benchmark time series classification algorithms?	James Large, Anthony Bagnall and Paul Southam
<b>76</b>	Mining network motif discovery by learning techniques	Bogdan-Eduard-Madalin Mursa, Anca Andreica and Laura Diosan
<b>80</b>	Urban Pollution Environmental Monitoring System Using IoT Devices and Data Visualization: A case study	Paul Rosero, Diego Hernán Peluffo-Ordoñez, Vivian López and Leandro Llorente

**Session 3.4: Hybrid Intelligent Applications III****Friday September 6th, 11:30-13:30****Room 2****Chairman: Lidia Sánchez González**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
<b>79</b>	Optimization of the Master Production Scheduling in a Textile Industry using Genetic Algorithm	Leandro L. Lorente-Leyva, Jefferson R. Murillo-Valle, Yackleem Montero-Santos, Israel D. Herrera-Granda, Erick P. Herrera-Granda, Paul D. Rosero-Montalvo, Diego H. Peluffo-Ordóñez and Xiomara P. Blanco-Valencia
<b>82</b>	Crowd-Powered Systems to Diminish the Effects of Semantic Drift	Saulo Pedro and Estevam Hruschka Jr
<b>87</b>	A Hybrid Automatic Classification Model for Skin Tumour Images	Svetlana Simić, Svetislav D. Simić, Zorana Banković, Milana Ivkov-Simić, José R. Villar and Dragan Simić
<b>28</b>	Surface defect modelling using Co-occurrence Matrix and Fast Fourier Transformation	Iker Pastor-López, Borja Sanz, José Gaviria de la Puera and Pablo García Bringas
<b>16</b>	Reinforcement Learning Experiments Running Efficiently over Widely Heterogeneous Computer Farms	Borja Fernandez-Gauna, Xabier Larrucea and Manuel Grana
<b>24</b>	Does the order of attributes play an important role in classification?	Antonio J. Tallón-Ballesteros, Simon Fong and Rocío Leal-Díaz
<b>83</b>	Active Image Data Augmentation	Flávio Santos, Cleber Zanchettin, Leonardo Matos and Paulo Novais