

IEA/AIE 2017



The 30th International Conference on Industrial, Engineering, Other
Applications of Applied Intelligent Systems

June 27-30, 2017 - Arras

Conference program

Tuesday, June 27th

1:30pm -> 5pm

Tuesday, June 27 th		
1:30pm -> 5pm		
IEA/AIE'17 Registration	Workshop 1	Workshop 2
	WASPIQ Workshop on ASP technologies for Q uerying large scale multisource heterogeneous web information Program : http://waspiq2017.lsis.org/waspiq2017/?q=node/9	CAnimAI Computer A nimation and A rtificial Intelligence Program : http://www.cril.univ-artois.fr/ieaaie2017/main/canimai/

Wednesday, June 28th

8:30am -> 8:45am **IEA/AIE'17 Welcome**

8:45am -> 9:45am Invited talk 1 **Creativity for Research - an Analogy Model** (Jian J. ZHANG, Bournemouth University, UK)
Chairs: Moonis Ali

9:45am -> 10:15am Coffee break

10:15am -> 12pm **Parallel sessions 1**

Session 1.A Constraints, planning and optimization Session Chair: Luca Pulina	Session 1.B Data mining & Machine learning (1) Session Chair: Paul Darwen	Session 1.C (Special Track) Applications of Argumentation Session Chair: Ofer Orieli
<ul style="list-style-type: none"> ▪ 34 Seda Polat Erdeniz, Alexander Felfernig, Muesluem Atas, Trang Tran, Michael Jeran and Martin Stettinger Cluster-Specific Heuristics for Constraint Solving ▪ 117 Fu-Shiung Hsieh, Fu-Min Zhan and Yi-Hong Guo Car Pooling Based On A Meta-heuristic Approach ▪ 153 Domen Soberl and Ivan Bratko Reactive motion planning with qualitative constraints ▪ 55 Behrouz Afshar Nadjafi, Mehdi Yazdani and Mahyar Majlesi A Hybrid of Tabu Search and Simulated Annealing Algorithms for Preemptive Project Scheduling Problem (short paper) ▪ 102 Imen Chaouch, Olfa Belkahla Driss and Khaled Ghedira Elitist Ant System for the Distributed Job shop Scheduling Problem (short paper) 	<ul style="list-style-type: none"> ▪ 134 Armando Collado, Maria D. R-Moreno, David F. Barrero and Daniel Rodriguez Machine learning approach to detect falls on elderly people using sound ▪ 74 Asma Trabelsi, Zied Elouedi and Eric Lefevr A novel k-NN approach for data with uncertain attribute values ▪ 109 Nassima Ben Hariz, Hela Koufi and Ezzeddine Zagrouba On Combining Imputation Methods for Handling Missing Data ▪ 29 Wissam Sibli, Reda Alami, Frank Meyer and Pascale Kuntz Supervised Feature Space Reduction for Multi-Label Nearest Neighbors ▪ 3 Nanglaik Ma Forecasting airport' departure passenger movements using data analytics (short paper) 	<ul style="list-style-type: none"> ▪ 8 Kawsar Noor, Anthony Hunter and Astrid Mayer Analysis of Medical Arguments from Patient Experiences Expressed on the Social Web ▪ 68 Sylvie Doutre, Faustine Maffre and Peter McBurney A Dynamic Logic Framework for Argumentation: Adding and Removing Arguments ▪ 72 Teeradaj Racharak, Satoshi Tojo, Nguyen Duy Hung and Prachya Boonkwan Combining Answer Set Programming with Description Logics for Analogical Reasoning under an Agent's Preferences ▪ 75 Nikolaos I. Spanoudakis, Elena Constantinou and Antonis C. Kakas Modeling Data Access Legislation with Gorgias ▪ 92 Adam Wyner and Hannes Strass dARe - Using Argumentation to Explain Conclusions from a Controlled Natural Language Knowledge Base

12pm -> 1:30pm

***** Lunch *****

Wednesday, June 28th

3:30pm -> 5:30pm

Parallel sessions 3

Session 3.A Recommender systems Session Chair : Sylvie Doutré	Session 3.B Decision support systems Session Chair : Pradorn Sureephong	Session 3.C (Special Track) Intelligent Systems in Healthcare and mHealth for Health Outcomes Session Chairs: Jiang Bian & François Modave
<ul style="list-style-type: none"> ▪ 63 Ludovik Çoba and Markus Zanker Replication and reproduction in recommender systems research - evidence from a case-study with the Rrecsys library ▪ 80 Raoua Abdelkhalek, Imen Boukhris and Zied Elouedi A New User-Based Collaborative Filtering Under the Belief Function Theory ▪ 108 Sabrine Ben Abdrabbah, Manel Ayadi, Raouia Ayachi and Nahla Ben Amor Aggregating Top-K Lists in Group Recommendation using Borda Rule ▪ 115 Muesluem Atas, Alexander Felfernig, Thi Ngoc Trang Tran, Martin Stettinger and Seda Polat Erdeniz An Analysis of Group Recommendation Heuristics for High- and Low-Involvement Items ▪ 147 Montassar Ben Messaoud, Ilyes Jenhani, Eya Garci and Toon De Pessemier SemCoTrip: A variety-seeking model for recommending travel activities in a composite trip ▪ 97 Mounira Souli, Ahmed Badreddine and Taieb Ben Romdhane A New model to implement a SWOT Fuzzy ANP (short paper) 	<ul style="list-style-type: none"> ▪ 28 Nicholas Nechval, Gundars Berzins, Vadims Danovics A New Dynamic Model for Anticipatory Adaptive Control of Airline Seat Reservation via Order Statistics of Cumulative Customer Demand ▪ 77 Amira Dhoub, Abdelwaheb Trabelsi, Christophe Kolski and Mahmoud Neji A Multi-Criteria Decision Support Framework for Interactive Adaptive Systems Evaluation ▪ 93 Fadwa Oukhay, Hajer Ben Mahmoud and Taieb Ben Romdhane Application of Multi-Criteria Decision Making Method for Developing a Control Plan ▪ 142 Mariam Ben Hassen, Mohamed Turki and Faïez Gargouri Towards Extending Business Process Modeling Formalisms with Information and Knowledge Dimensions ▪ 36 Nicholas Nechval, Gundars Berzins, Vadims Danovics Adaptive Planning In-Service Inspections of Fatigued Structures in Damage Tolerance Situations via Observations of Crack Growth Process (short paper) ▪ 56 Roxane Koitz, Johannes Lüftenegger, and Franz Wotawa Model-Based Diagnosis in Practice: Interaction Design of an Integrated Diagnosis Application for Industrial Wind Turbines (short paper) ▪ 100 Karim El Mernissi, Pierre Feillet, Nicolas Maudet and Wassila Ouerdane Introducing causality in business rule-based decisions (short paper) 	<ul style="list-style-type: none"> ▪ 106 Julia Mollee, Eric Fernandes de Mello Araujo and Michel Klein Exploring Parameter Tuning for Analysis and Optimization of a Computational Model ▪ 148 Omar Eltayeb, Todd Eaglin, Malak Abdullah, David Burlinson, Wenwen Dou and Lixia Yao Detecting Drinking-Related Contents on Social Media by Classifying Heterogeneous Data Types ▪ 167 Riyi Qiu, Mirsad Hadzikadic and Lixia Yao Estimating Disease Burden Using Google Trends and Wikipedia Data ▪ 173 Muhammad Amith, Yaoyun Zhang, Hua Xu and Cui Tao Knowledge-based Approach for Named Entity Recognition in Biomedical Literature, a Use Case in Biomedical Software Identification ▪ 174 Olivia Zhang, Yaoyun Zhang, Jun Xu, Kirk Roberts, Xiang Y. Zhang and Hua Xu I Interweaving Domain Knowledge and Unsupervised Learning for Psychiatric Stressor Extraction from Clinical Notes ▪ 110 Julia Mollee and Michel Klein Empirical validation of a computational model of influences on physical activity behavior
6pm -> 8pm	Arras historical visit (Belfry and subterranean galleries of the Boves)	
8pm -> 9pm	Welcome ceremony	

Thursday, June 29th

8:45am -> 9:45am

Invited talk 2 **Rational Enterprise Architecture** (Leendert van der Torre, University of Luxembourg)
Chair: Gabriele Kern-Isberner

9:45am -> 10:15am

Coffee break - Posters

10:15am -> 12pm

Parallel sessions 4

Session 4.A Knowledge representation and reasoning Chairs:G. Kern Isberner and C. Eichhorn	Session 4.B Navigation, control and autonomous agents Session Chair : Zied Bouraoui	Session 4.C (Special Track) Anomaly detection Session Chair : Ryan McConville
<ul style="list-style-type: none"> ▪ 35 Ofer Arieli, Annemarie Borg and Christian Straßer Argumentative Approaches to Reasoning with Consistent Subsets of Premises ▪ 114 Kennedy Kambona, Thierry Renaux and Wolfgang De Meuter Efficient Matching in Heterogeneous Rule Engines ▪ 118 Gloria Bordogna and Simone Sterlacchini Volunteered Geographic Information management supported by Fuzzy Ontologies and level-based approximate reasoning ▪ 156 Christoph Beierle and Steven Kutsch Regular and Sufficient Bounds of Finite Domain Constraints for Skeptical C-Inference ▪ 132 Laura Pandolfo and Luca Pulina ADNOTO: A Self-Adaptive System for Automatic Ontology-Based Annotation of Unstructured Documents (short paper) ▪ 145 Christoph Beierle, Christian Eichhorn and Gabriele Kern-Isberner On Transformations and Normal Forms of Conditional Knowledge Bases (short paper) 	<ul style="list-style-type: none"> ▪ 26 Aymeric Rateau, Wim Van der Borght, Marcello Mastroleo, Alessandro Pietro Bardelli, Alessandro Bacchini and Federico Sassi Development of a novel driver model offering human like longitudinal vehicle control in order to simulate emission in real driving conditions ▪ 61 Ana Paula Genari Martin, Paulo E. Santos and Marjan Safi-Samghabadi Consistency Check in a Multiple Viewpoint System Reasoning about Occlusion ▪ 151 Bingbin Yu, José de Gea Fernández, Yohannes Kassahun and Vinzenz Bargsten Learning the Elasticity of a Series-Elastic Actuator for Accurate Torque Control ▪ 10 Giulia Mastrodonato, Domenico Camarda, Caterina De Lucia and Dino Borri The effect of rotation in the navigation of multi-level buildings: A pilot study (short paper) ▪ 105 Olivier Mason, Jean Baratgin and Frank Jamet NAO robot, transmitter of social cues: what impacts? The example with “endowment effect” (short paper) ▪ 177 Jiri Bradle, Jakub Mesicek, Ondrej Krejcar, Ali Selamat and Kamil Kuca Arduino as a Control Unit for the System of Laser Diodes (short paper) 	<ul style="list-style-type: none"> ▪ 39 Fabian Braun, Olivier Caelen, Evgueni N. Smirnov, Steven Kelk and Bertrand Lebichot Improving Card Fraud Detection through Suspicious Pattern Discovery ▪ 49 Wan-Jui Lee Contextual Air Leakage Detection in Train Braking Pipes ▪ 71 Cherif Dani, Mohamed Cherif Dani, Henri Doreau and Samantha Alt K-Means Application for Anomaly Detection and Log Classification in HPC ▪ 154 Mahdi Washha, Aziz Qaroush, Florence Sedes and Manel Mezghani Information Quality in Social Networks: A Collaborative Method for Detecting Spam Tweets in Trending Topics ▪ 146 <i>Fernando Roperro, Daniel Vaquerizo, Pablo Muñoz and María Dolores Rodríguez</i> An advanced teleassistance system to improve life quality in the Elderly

12pm -> 1:30pm

***** Lunch *****

Thursday, June 29th

1:30pm -> 3:30pm

Parallel sessions 5

Session 5.A Constraints, planning and optimization 2 Session Chair : Malek Mouhoub	Session 5.B Sentiment analysis and social media Session Chair : Fujita Hamido	Session 5.C (Special Track) Graphical Models: From Theory to Applications Session Chair : Simon de Givry
<ul style="list-style-type: none"> ▪ 12 Eisa Alanazi, Malek Mouhoub and Mahmoud Halfawy A New System for the Dynamic Shortest Route Problem ▪ 33 Yuyan Sun, Yuxuan Liang, Zizhen Zhang and Jiahai Wang M-NSGA-II: A Memetic Algorithm for Vehicle Routing Problem with Route Balancing ▪ 51 Jeng-Shyang Pan, Zhenyu Meng, Huarong Xu and Xiaoqing Li A matrix-based implementation of DE algorithm: the compensation and deficiency ▪ 137 Hanqing Zhao, Zengchang Qin, Weijia Liu and Tao Wan A Bayesian Model of Game Decomposition ▪ 158 Anis Yazidi, Hugo Lewi Hammer and Tore Jonassen Two-Timescale Learning Automata for Solving Stochastic Nonlinear Resource Allocation Problems ▪ 164 Zarrouk Rim, Imed Bennour, Abderrazek Jemai and Abdelghani Bekrar FJS Problem under Machine Breakdown (short paper) 	<ul style="list-style-type: none"> ▪ 21 Yifan Liu, Zengchang Qin, Pengyu Li and Tao Wan Stock Volatility Prediction Using Recurrent Neural Networks with Sentiment Analysis ▪ 30 Han Wang and Jia-Ling Koh Timeline Summarization for Event-related Discussions on a Chinese Social Media Platform ▪ 45 Sabrine Mallek, Imen Boukhris, Zied Elouedi and Eric Lefevre Evidential Link Prediction in Uncertain Social Networks Based on Node Attributes (short paper) ▪ 76 Khaled Alomari, Hatem Elsherif and Khaled Shaalan Arabic Tweets Sentimental Analysis using Machine Learning (short paper) ▪ 86 C. Natalie van der Wal, Maik Couwenberg and Tibor Bosse Getting Frustrated: Modelling Emotion Contagion in Stranded Passengers (short paper) ▪ 123 Orestes Appel, Francisco Chiclana, Jenny Carter and Hamido Fujita A consensus approach to sentiment analysis (short paper) ▪ 89 C. Natalie van der Wal, Daniel Formolo and Tibor Bosse An Agent-Based Evacuation Model with Social Contagion Mechanisms and Cultural Factors (short paper) 	<ul style="list-style-type: none"> ▪ 9 Romain Rincé, Romain Kervarc, Philippe Leray On the Use of WalkSAT Based Algorithms for MLN Inference in Some Realistic Applications ▪ 27 Anders Madsen, Nicolaj Søndberg-Jeppesen, Mohamed Sayed, Michael Peschl and Niels Lohse Applying Object-Oriented Bayesian Networks for Smart Diagnosis and Health Monitoring at both Component and Factory Level ▪ 144 Nahla Ben Amor, Didier Dubois, Héla Gouider and Henri Prade Graphical representations of multiple agent preferences ▪ 70 Thierno Kante and Philippe Leray A Probabilistic Relational Model approach for Fault Trees modeling (short paper) ▪ 107 Narjes Ben Hariz and Boutheina Ben Yaghlane Incremental Method for Learning Parameters in Evidential Networks (short paper) ▪ 130 Lionel Torti, Christophe Gonzales and Willemin Pierre-Henri aGrUM: a Graphical Universal Model framework (short paper)

3:30pm -> 4pm

Coffee break - Posters

6 pm -> 7:30pm

Social event (Louvre-Lens Museum visit)

8pm -> 10pm

Banquet (at L'Atelier de Marc Meurin)

Friday, June 30th

8:45am -> 9:45am

Invited talk 3

Fuzzy Semantic Web Languages and Beyond (Umberto Straccia, STI-CNR – Pisa, Italy)

Chair: Henri Prade

9:45am -> 10:15am Coffee break

10:15am -> 12:15pm

Parallel sessions 6

Session 6.A

Games, computer vision and animation

Session Chair : Ali Selamat

Session 6.B

Uncertainty management

Session Chair : Davide Petturiti

Session 6.C (Special Track)

**Innovative Applications of Textual
Analysis based on AI**

Session Chair : Yinglin Wang

- 50 Ma Thi Chau, Tabia Karim, Lagrue Sylvain, Le Thanh Ha, Bui The Duy and Nguyen Thanh Thuy **Annotating movement phrases in Vietnamese folk dance videos**
- 113 Quentin Labernia, Victor Codocedo, Céline Robardet, and Mehdi Kaytoue **Mining the Lattice of Binary Classifiers for Identifying Duplicate Labels in Behavioral Data**
- 127 Kuniko Yamada, Hiroshi Ueda, Harumi Murakami, and Ikuo Oka **Presenting Mathematical Expression Images on Web to Support Mathematics Understanding** (short paper)
- 131 Yootthapong Tongpaeng, Mongkhol Rattanakhum, Pradorn Sureephong and Santichai Wicha **Implementing A Tool for Translating Dance Notation to Display in 3D Animation: A Case Study of Thai Traditional Dance** (short paper)
- 136 Ob-Orm Muangmoon, Pradorn Sureephong and Karim Tabia **Dance Training Tool using Kinect-based Skeleton Tracking and Evaluating Dancer's Performance** (short paper)
- 155 Ismael Sagredo-Olivenza, Pedro Pablo Gómez-Martín, Marco Antonio Gómez-Martín and Pedro A. González-Calero **Using Program by Demonstration and Visual Scripting to supporting Game Design** (short paper)

- 82 Angelo Gilio and Giuseppe Sanfilippo **Conjunction and disjunction among conditional events**
- 53 Andrea Capotorti and Marco Baioletti **An efficient probabilistic merging applied to statistical matching**
- 73 Giulianella Coletti, Davide Petturiti and Barbara Vantaggi **Interval-based possibilistic logic in a coherent setting**
- 78 Jean Baratgin, Giulianella Coletti, Frank Jamet and Davide Petturiti **Experimental evaluation of the understanding of qualitative probability and probabilistic reasoning in young children** (short paper)
- 138 Lina Abassi and Imen Boukhris **A gold standards-based crowd label aggregation within the belief function theory**
- 37 Amanda Whitbrook, Qinggang Meng and Paul Chung **A Robust, Distributed Task Allocation Algorithm for Time-Critical, Multi Agent Systems Operating in Uncertain Environments**
- 157 Didier Dubois and Henri Prade **A set-valued approach to multiple source evidence** (short paper)

- 163 Hao Shao **Active Learning for Text Mining from Crowds**
- 168 Xing Wu, Zhikang Du, Shuji Dai, Yazhou Liu and Mingyu Zhong **Chinese Lyrics Generation using Long Short-Term Memory Neural Network**
- 169 Bo Xu, Yong Xu, Jiaqing Liang, Chenhao Xie, Bin Liang, Wanyun Cui and Yanghua Xiao **CN-DBpedia: A Never-Ending Chinese Knowledge Extraction System**
- 170 Yinglin Wang, Yi Huang and Ming Wang **Aspect-Based Rating Prediction on Reviews Using Sentiment Strength Analysis**
- 171 Wanqiu Kou, Fang Li and Zhe Ye **Using Topic Labels for Text Summarization**
- 172 Deng Cai and Hai Zhao **Pair-Aware Neural Sentence Modeling for Implicit Discourse Relation Classification**

12:15pm -> 12:30pm

***** Closing session *****

12:30am-> 2pm

***** Lunch *****

List of posters:

- 22 Petr Sosnin and Michail Galochkin **Way of Coordination of Visual Modeling and Mental Imagery in Conceptual Solution of Project Task**
- 43 Dennis Romero, Angely Oyola and Boris Vintimilla **A Dijkstra-based algorithm for selecting the Shortest-Safe Evacuation Routes in dynamic environments (SSER)**
- 46 Marco Menapace and Armando Tacchella **Ontologies in System Engineering: a Field Report**
- 60 Annemarie Borg, Daniel Frey, Dunja Seselja and Christian Strasser **An argumentative agent-based model of scientific inquiry**
- 83 Fadoua Chakchouk, Julien Vion, Sylvain Piechowiak, René Mandiau, Makram Soui and Khaled Ghedira **Replication in fault-tolerant distributed CSP**
- 87 Ismat Chaib Draa, Emmanuelle Grislin and Smail Niar **An energy-aware learning agent for power management in mobile devices**
- 133 Suepphong Chernbumroong, Pradorn Sureephong and Yootthapong Tongpaeng **Chiang Mai Digital Craft: A Case Study of Craftsmanship's Knowledge Representation Using Digital Content Technology**
- 140 Evangelos Karampotsis, Konstantinos Boulas, Alexandros Tzanetos, Vasilios P. Androvitsaneas, Ioannis F. Gonos, Georgios Dounias and Ioannis A. Stathopoulos **Computational Intelligence Techniques for Modelling the Critical Flashover Voltage of Insulators: From Accuracy to Comprehensibility**
- 178 Ondrej Krejcar and Ali Selamat **Optimal Route Prediction as a Smart Mobile Application of Gift Ideas**

The poster sessions are scheduled on Thursday, June 29th from 9:45am to 4pm. Poster authors are requested to be present at their poster at least during the coffee breaks. For the posters' size, the authors are encouraged to use the standard A0 using the portrait orientation.