Table of Contents

Welcome Message from the Chairpersons

The organizing committee is honored to welcome you to the 2017 IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (IEEE CIVEMSA 2017), held in Annecy, France, on June 26-28, 2017.

This conference, co-sponsored by the IEEE Computational Intelligence Society and the IEEE Instrumentation and Measurement Society, roots back to the 1996 IEEE Workshop on Emerging Technologies for Instrumentation and Measurement, and continue the interdisciplinary experience of the previous technical meetings IEEE CIMSA and IEEE VECIMS by filling the gap in knowledge and practice, focusing on all aspects of computational intelligence, human-computer interaction technologies, and virtual environments for measurement systems and the related applications, from the points of view of both theory and practice.

The three-day conference program aims to provide a forum for the attendees to carry out presentations, information exchanges, extensive discussions on theory, methodology and applications in the field of interest of the conference, as well as to foster networking, planning for future collaborations and new research projects that will further advance the use of computational intelligence and virtual environments in the instrumentation and measurement field and the related applications. We hope the conference will foster and discuss opportunities and challenges in using computational intelligence and virtual environments breakthroughs aiming to the advancement of instrument performance and measurement capabilities, and all related applications in a broad spectrum of areas. To promote interaction and discussion in the audience, sufficient time is allotted to presenters not only to introduce their achievements, but also to engage in extended discussions with the participants.

We hope you will find IEEE CIVEMSA 2017 a challenging and productive experience, celebrating the 20th anniversary of the conference. We trust that you will also enjoy the location, the culture and the food: Annecy will be an exciting experience!

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	Roman Z. Morawski, Warsaw University of Technology, Poland
	Daniel Pasquet, ENSEA, IEEE France
General Chairs:	Sylvie Galichet, Savoie Mont Blanc University, France
	Eric Benoit, Savoie Mont Blanc University, France
Program Chairs:	Giovanni B. Rossi, University of Genoa, Italy
	Olivier Strauss, University of Montpellier, France

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Feng Wan, *University of Macau, Macao*

*Thank you to all of the reviewers for IEEE CIVEMSA 2017

Keynote Speakers

Monday, June 26, 9:10 – 10:00
"Towards Autonomous Maritime operations"
Peter Wide, The Arctic University, Tromsoe, Norway

Monday, June 26, 13:00 – 14:00
"Possibility theory in image processing"
Olivier Strauss, University of Montpellier, France

Tuesday, June 27, 9:30 – 10:30
"Education for and with CIVEMSA: Boon, Bust, and (Maybe?) Boon Again for Computers in Our Classrooms"
Mel Siegel, Carnegie-Mellon University at Pittsburg, USA

Tuesday, June 27, 14:00 – 15:00
"Computational Intelligence for Industrial and Environmental Applications"
Vincenzo Piuri, Università degli Studi di Milano, Italy

Wednesday, June 28, 9:30 – 10:00
"Avalanche risk evaluation: computational intelligence and human expertise"
Alain Duclos, ALEA Company, Aussois, France

Social Events

Monday, June 26

18:30
Animated Film Museum Visit
Art and History Academy

20:00
Welcome Cocktail
Art and History Academy

Tuesday, June 27

19:00 – 20:00
City Hall Reception

20:30 – 22:30
Conference Dinner
Libellule Gala Dinner Cruise

Program Schedule – Monday, June 26

Monday – 26/06/2017		
8:00 – 9:00	**Registration**	
9:00 – 9:10	**Opening Session**	
9:10 – 10:00	**Plenary Talk** Peter Wide, "Towards Autonomous Maritime operations"	
10:00 – 10:30	**Coffee Break**	
10:30 – 12:00	Intelligent Monitoring and Control Systems **Room: B014**	Text Analysis **Room: B120**
12:00 – 13:00	**Luncheon**	
13:00 – 14:00	**Plenary Talk** Olivier Strauss, "Possibility theory in image processing"	
14:00 – 15:30	Neural and fuzzy techniques for complex systems **Room: B014**	Sensors and displays **Room: B120**
15:30 – 15:45	**Coffee Break**	
15:45 – 17:15	Information Fusion **Room: B014**	Augmented and virtual reality **Room: B120**
18:30	**Animated film museum visit (Art and History Academy)**	
20:00	**Welcome Cocktail (Art and History Academy)**	

Program Schedule – Tuesday, June 27

Tuesday – 27/06/2017		
9:00 – 9:30	**Registration**	
9:30 – 10:30	**Plenary Talk** Mel Siegel, "Education for and with CIVEMSA: Boon, Bust, and (Maybe?) Boon Again for Computers in Our Classrooms"	
10:30 – 11:00	**Coffee Break and Industrial Exhibit**	
11:00 – 12:30	Intelligent Measurement Systems I **Room: B014**	Industrial Applications I **Room: B120**
12:30 – 13:30	**Luncheon**	
13:30 – 14:00	**Industrial Exhibit**	
14:00 – 15:00	**Plenary Talk** Vincenzo Piuri, "Computational Intelligence for Industrial and Environmental Applications"	
15:00 – 16:30	Intelligent Measurement Systems II **Room: B014**	Industrial Applications II **Room: B120**
16:30 – 17:00	**Coffee Break and Industrial Exhibit**	
19:00 – 20:00	**City Hall Reception**	
20:00	**Libellule Boarding for Gala Dinner (on the side of the city hall)**	
20:30 – 22:30	**Gala Dinner Cruise on the Lake**	
22:30 – 00:30	**Musical animation on the Libellule at dock**	

Program Schedule – Wednesday, June 28

Wednesday – 28/06/2017	
9:00 – 9:30	**Registration**
9:30 – 10:00	**Plenary Talk** Alain Duclos, "Avalanche risk evaluation: computational intelligence and human expertise"
10:00 – 10:30	**Coffee Break**
10:30 – 12:00	Computation Intelligence Methods for Risky Mountain I **Room: B014** / Computational intelligence techniques for applications I **Room: B120**
12:00 – 13:00	**Luncheon**
13:00 – 14:00	Computation Intelligence Methods for Risky Mountain II **Room: B014**
14:00 – 15:30	Computational intelligence techniques for applications II **Room: B014**
15:30 – 15:45	**Closing Session**
15:45 – 16:30	**Coffee Break**

Monday, June 26

8:00 – 9:00
Registration

9:00 – 9:10
Opening Session

9:10 – 10:00
Plenary Talk – "Towards Autonomous Maritime operations"
Peter Wide, The Arctic University, Tromsoe, Norway

10:00 – 10:30
Coffee Break

10:30 – 12:00
Intelligent Monitoring and Control Systems
Room: B014
Chair: P. Wide

A One-Class Clustering Technique For Novelty Detection And Isolation In Sensor Networks
Sepehr Maleki (University of Lincoln, United Kingdom)
Chris Bingham (University of Lincoln, United Kingdom)

An expert knowledge based methodology for online detection of signal oscillations
Filippo Tilaro (CERN, Switzerland)
Manuel Gonzalez Berges (CERN, Switzerland)
Mikhail Roshchin (Siemens AG, Germany)
Benjamin Bradu (CERN, Switzerland)

Detection of faulty sensors of fire and explosions
Chafouk Houcine (IRSEEM, France)

Distributed to Embedded Bayesian Network for Diagnosis of a Networked Robot
Insaf Sassi (University Grenoble Alpes, CNRS, Gipsa-Lab)
Alexia Gouin (University Grenoble Alpes, CNRS, Gipsa-Lab)
Jean-Marc Thiriet (University Grenoble Alpes, CNRS, Gipsa-Lab)

Monday, June 26

Development of An Arabic Conversational Intelligent Tutoring System for Education of Children with ASD
Sumayh Aljameel (Manchester Metropolitan University, United Kingdom)

Text-Independent Speaker Recognition for Ambient Intelligence Applications by Using Information Set Features
Abhinav Anand (Universirty of Milan, Italy)
Ruggero Donida Labati (Università degli Studi di Milano, Italy)
Madasu Hanmandlu (I.I.T. Delhi, India)
Vincenzo Piuri (Università degli Studi di Milano, Italy)
Fabio Scotti (Università degli Studi di Milano, Italy)

A Text-mining and possibility theory based model using public reports to highlight the sustainable development strategy of a city
Benjamin Duthil (Laboratory L3i, France)
Abdelhak Imoussaten (Ecole des mines d'Alès, France)
Jacky Montmain (Ecole des mines d'Alès, France)

Towards a Qualitative Representation for Specifying Natural Language
Richard Dapoigny (University Savoie Mont Blanc, France)
Patrick Barlatier (University of Savoy, France)

12:00 – 13:00
Luncheon

13:00 – 14:00
Plenary Talk – "Possibility theory in image processing"
Olivier Strauss, University of Montpellier, France

Monday, June 26

14:00 – 15:30
Neural and fuzzy techniques for complex systems
Room: B014
Chair: O. Strauss

Evolving Fuzzy Models for Anti-lock Braking Systems
Radu-Emil Precup (Politehnica University of Timisoara, Romania)
Claudia-Adina Dragos (Politehnica University of Timisoara, Romania)
Elena-Lorena Hedrea (Politehnica University of Timisoara, Romania)
Ioan-Daniel Borlea (Politehnica University of Timisoara, Romania)
Emil M. Petriu (University of Ottawa, Canada)

A Possibilistic Framework for Identifying the Performance to be Improved in the Imprecise Context of Preliminary Design Stage
Diadie Sow (LGI2P, France)
Abdelhak Imoussaten (Ecole des mines d'Alès, France)
Pierre Couturier (Ecole des mines d'Alès, France)
Jacky Montmain (Ecole des mines d'Alès, France)

Deep learning for stock market prediction from financial news articles
Manuel Vargas (COPPE/UFRJ, Brazil)
Beatriz Lima (COPPE/UFRJ, Brazil)
Alexandre Evsukoff (COPPE/UFRJ, Brazil)

14:00 – 15:30
Sensors and displays
Room: B120
Chair: P. Wide

LabVIEW Based Real time Monitoring of HVAC System for Residential Load
Chokri Belhadj (King Fahd University of Petroleum & Minerals, Saudi Arabia)

Sensing Principle for Real-time Characterization of Viscoelasticity in the Beating Myocardial Tissue
Amir Hooshiar (Concordia University, Canada)
Masoud Razban (Concordia University, Canada)
Naghmeh Bandari (Concordia University, Canada)
Javad Dargahi (Concordia University, Canada)

A Trusted Lightweight Synchronisation Protocol for Wireless Ad-hoc Networks
Adrien van den Bossche (IRIT, Université de Toulouse, France)
Nicolas Fourty (Grenoble INP - LCIS, France)
Jean-Paul Jamont (Univ. Grenoble Alpes, France)

15:30 – 15:45
Coffee Break

Monday, June 26

Parameters Fitting to Standard Propagation Model (SPM) for Long Term Evolution (LTE) using Nonlinear Regression Method
Paulo Freitas (Federal University of Parana & Copel Telecommunications, Brazil)
Horacio Tertuliano, Filho (Universidade Federal do Parana, Brazil)

An Evidential System for Color Recognition Using Multi-Cameras
Thanh Nguyen (University Savoie Mont Blanc, France)
Didier Coquin (University Savoie Mont Blanc, France)
Reda Boukezzoula (University Savoie Mont Blanc, France)

Simple Signature Verification Sub-System for Identity Recognition
Viet Quoc Tran (RMIT International University Vietnam, Vietnam)
Moi Tin Chew (Massey University, New Zealand)
Serge Demidenko (Massey University, New Zealand)
Ye Chow Kuang (Monash University, Malaysia)
Melanie Ooi (Heriot-Watt University, Malaysia)

Selectively-Densified Mesh Construction for Virtual Environments Using Salient Points Derived from a Computational Model of Visual Attention
Ghazal Rouhafzay (Université du Québec en Outaouais, Canada)
Ana-Maria Cretu (Université du Québec en Outaouais, Canada)

Global Localization and Tracking for Wearable Augmented Reality in Urban Environments
Thomas Calloway (University of Massachusetts in Lowell, USA)
Dalila B. Megherbi (University of Massachusetts in Lowell, USA)
Hongsheng Zhang (Thales Visionix, USA)

A Framework for Analyzing AR/VR Collaborations: An Initial Result
Michael Tanaya (University of Washington, Bothell, USA)
Yang Koukeng (University of Washington, Bothell, USA)
Taran Christensen (University of Washington, Bothell, USA)
Michael O'Keefe (University of Washington, Bothell, USA)
Shen Li (University of Washington, Bothell, USA)
James Fridley (University of Washington, Bothell, USA)
Kelvin Sung (University of Washington, Bothell, USA)

18:30
Animated Film Museum Visit (Art and History Academy)

20:00
Welcome Cocktail (Art and History Academy)

Tuesday, June 27

9:00 – 9:30
Registration

9:30 – 10:30
Plenary Talk – "Education for and with CIVEMSA: Boon, Bust, and (Maybe?) Boon Again for Computers in Our Classrooms"
Mel Siegel, Carnegie-Mellon University at Pittsburg, USA

10:30 – 11:00
Coffee Break and Industrial Exhibit

11:00 – 12:30
Intelligent Measurement Systems I
Room: B014
Chair: D. Coquin

Enhancing Structured Light Range Imaging by Adaptation of Color, Exposure and Focus
Alain Boyer (University of Ottawa, Canada)
Pierre Payeur (University of Ottawa, Canada)

Timber Health Monitoring Using Piezoelectric Sensor and Machine Learning
Ryo Oiwa (Tokyo University of Science, Japan)
Takumi Ito (Tokyo University of Science, Japan)
Takayuki Kawahara (Tokyo University of Science, Japan)

Uncertainty Management of Situations in a Housing Use Context
Cedric Deffo Sikounmo (University Savoie, France)
Stephane Perrin (University of Savoie, France)
Eric Benoit (University Savoie, France)

Tuesday, June 27

11:00 – 12:30
Industrial Applications I
Room: B120
Chair: D. Coquin

A Haptic Quality Control Method Based on the Human Somatosensory System
Bruno Albert (Université Savoie Mont Blanc, France)
Jean-Luc Maire (Université Savoie Mont Blanc, France)
Maurice Pillet (Université Savoie Mont Blanc, France)
Cecilia Zanni-Merk (INSA de Rouen, France)
François De Bertrand De Beuvron (University of Strasbourg, France)
Julien Charrier (INEVA, France)
Christophe Knecht (INEVA, France)

Quality Prediction in Injection Molding
Pierre Nagorny (University Savoie Mont Blanc, France)
Maurice Pillet (University Savoie Mont Blanc, France)
Eric Pairel (University Savoie Mont Blanc, France)
Ronan Le Goff (Centre Technique IPC, France)
Marlène Wali (Centre Technique IPC, France)
Jérome Loureaux (Centre Technique IPC, France)
Patrice Kiener (InModelia, France)

A Redundancy Measure for Efficient Fuzzy Rule-Base Reduction
Liviu-Cristian Dutu (Université de Savoie, Romania)
Jean-Marc Tissot (Valeo Annemasse, France)
Stéphanie Dabic (Valeo Annemasse, France)
Gilles Mauris (University Savoie Mont Blanc, France)
Philippe Bolon (University of Savoie, France)

12:30 – 13:30
Luncheon

13:30 – 14:00
Industrial Exhibit

14:00 – 15:00
Plenary Talk – "Computational Intelligence for Industrial and Environmental Applications"
Vincenzo Piuri, Università degli Studi di Milano, Italy

Tuesday, June 27

A Neural Networks Portable and Agnostic Implementation Environment for Business Transformation Projects The Basic Structure
Antoine Trad (IBISTM, Switzerland)

A Neural Networks Portable and Agnostic Implementation Environment for Business Transformation Projects The Framework
Antoine Trad (IBISTM, Switzerland)

Family of Low-Cost NI ELVIS/LabVIEW-based Semiconductor Testers for Engineering Education
Moi Tin Chew (Massey University, New Zealand)
Serge Demidenko (Massey University, New Zealand)
Melanie Ooi (Heriot-Watt University, Malaysia)
Ye Chow Kuang (Monash University, Malaysia)

Challenges of Virtualization FPGA in a cloud context
Rym Skhiri (University of Monastir, France)
Virginie Fresse (Université Jean Monnet, Saint Etienne, France)
Jean-Paul Jamont (Univ. Grenoble Alpes, France)
Benoit Suffran (ST Microelectronics, France)

Minimizing makespan in hybrid flow shop scheduling with multiprocessor task problems using a discrete harmony search
Hanna Zini (Mohammed V University, Morocco)

Real-time 3D Reconstruction for Haptic Interaction
Mohamad Eid (New York University, United Arab Emirates (UAE))
Timothy Mulumba (New York University, United Arab Emirates (UAE))

Tuesday, June 27

16:30 – 17:00
Coffee Break and Industrial Exhibit

19:00 – 20:00
City Hall Reception

20:00
Libellule Boarding for Gala Dinner (on the side of the city hall)

20:30 – 22:30
Gala Dinner Cruise on the Lake

22:30 – 00:30
Musical Animation on the Libellule at dock

Wednesday, June 28

9:00 – 9:30
Registration

9:30 – 10:00
Plenary Talk – "Avalanche risk evaluation: computational intelligence and human expertise"
Alain Duclos, ALEA Company, Aussois, France

10:00 – 10:30
Coffee Break

10:30 – 12:00
Computation Intelligence Methods for Risky Mountain I
Room: B014
Chair: A. Duclos

Visual Analytics for Aiding Decisions of Ski Touring Itinerary in a Risky Snow Avalanche Environment
Frédéric Pourraz (LISTIC - University Savoie Mont Blanc, France)
Hervé Verjus (LISTIC - University Savoie Mont Blanc, France)
Gilles Mauris (LISTIC - University Savoie Mont Blanc, France)

New MCDM Methods Under Uncertainty applied to Integrated Natural Risks Management
Jean-Marc Tacnet (University Grenoble Alpes - Irstea, France)
Simon Carladous (UGA, Irstea, UR ETGR & AgroParisTech, France)
Jean Dezert (Onera, France)
Mireille Batton-Hubert (ENSMSE-DEMO, France)
Deqiang Han (Xi'an Jiaotong University, P.R. China)

Combined use of spaceborne SAR interferometry and in-situ measurements for glacier monitoring in mountain areas
Matthias Jauvin (University Savoie Mont Blanc, LISTIC, France)
Yajing Yan (Université de Savoie, France)
Emmanuel Trouve (Université de Savoie, France)

Wednesday, June 28

Fusion of Measurement Data from Impulse-Radar Sensors and Depth Sensors when Applied for Patients Monitoring
Pawel Mazurek (Warsaw University of Technology, Poland)
Jakub Wagner (Warsaw University of Technology, Poland)
Andrzej Miekina (Warsaw University of Technology, Poland)
Roman Morawski (Warsaw University of Technology, Poland)

Supervised Machine Learning Via Hidden Markov Models for Accurate Classification of Plant Stress Levels & Types Based on Imaged Chlorophyll Fluorescence Profiles & Their Rate of Change in Time
Julie S. Blumenthal (University of Massachusetts Lowell, USA)
Dalila B. Megherbi (Unversity of Massachusetts Lowell, USA)
Robert Lussier (GrowTech Inc., USA)

Phonocardiogram Classification Based on MFCC Extraction
Othmane El Badlaoui (Mohammed V University in Rabat, Morocco)
Ahmed Hammouch (Mohamed V-Souissi University, Morocco)

12:00 – 13:00
Luncheon

13:00 – 14:00
Computation Intelligence Methods for Risky Mountain II
Room: B014
Chair: A. Duclos

Wireless sensors network for landslide prevention
Rihab Fekih Romdhane (University Grenoble Alpes, France)
Youness Lami (Grenoble INP, France)
Denis Genon-Catalot (Grenoble INP, France)
Nicolas Fourty (Grenoble INP - LCIS, France)
André Lagreze (Grenoble INP, France)

Environmental Sensitivity Map of Solimões River Basin using JERS-1 SAR Images and Fuzzy Modeling
Carlos Beisl (COPPE/UFRJ, Brazil)
Alexandre Evsukoff (COPPE/UFRJ, Brazil)
Fernando Miranda (COPPE/UFRJ, Brazil)
Luiz Landau (Universidade Federal do Rio de Janeiro, Brazil)

Wednesday, June 28

Regularized Numerical Differentiation of Depth-Sensor Data in a Fall Detection System

Jakub Wagner (Warsaw University of Technology, Poland)
Pawel Mazurek (Warsaw University of Technology, Poland)
Roman Morawski (Warsaw University of Technology, Poland)

Towards a Vision-Based Targeting System for Counter Unmanned Aerial Systems (CUAS)
Amy Wagoner (Purdue University, USA)
Daniel K Schrader (Purdue University, USA)
Eric Matson (Purdue University, USA)

Rotation & Affine Invariant Accurate Feature selection and Matching Model for RGBD Images
Venushka Dharmasiri (University of Aizu, Japan)

15:30 – 15:45
Closing Session

15:45 – 16:30
Coffee Break