

SITIS 2019

Workshop Messages

ACI

Applied Computational Intelligence

Editorial

Computational Intelligence techniques are traditionally adopted in several different application domains such as industrial, medical, decision making, gaming to name but a few. Despite this growing diffusion, there are still many possible areas where computational intelligence application is partial or could be extended and improved, due to the actual limitations in terms of computational power or strict requirements in terms of assurance of the results.

This workshop aims to investigate the impact of the adoption of advanced and innovative Computational Intelligence techniques in emerging application fields like IoT and Big Data. This edition of the workshop is focused primarily on industrial and health applications with special emphasis to real time systems grounded on Big Data ecosystems.

The workshop will bring together researchers on different disciplines from academia and industry with a common objective: go beyond the frontiers of today applications of Computational Intelligence techniques. We are confident that it will constitute an excellent opportunity for the participant to engage in fruitful scientific and technical discussions.

We have selected four full papers for presentation (36% rate of acceptance), which had a positive score during the reviewing process. All papers were assigned to three members of the program committee for review, and at least three reviews were recorded for each paper. We would like to thank the international program committee for the support in the reviewing process and for their helpful comments.

November, 2019

Chairs

M. Anisetti, Università degli studi di Milano, Italy

V. Bellandi, Università degli Studi di Milano, Italy

A. Chehri, Université du Québec à Chicoutimi, Canada

G. Jeon, Incheon National University, Korea

DARWiN

Distributed, Autonomic and Robust Wireless Networks

Editorial

The International Workshop on Distributed, Autonomic and Robust Wireless Networks (DARWiN) aims to gather researchers interested on wireless communications. It provides an opportunity to discuss ongoing research, new contributions and topical subjects. DARWiN covers major aspects in both theoretical (modeling, algorithmic) and experimental (simulation, emulation, real experimentation) fields. The main application domains are ad hoc networks, sensor networks, mesh networks and vehicular networks, but they can be extended to other types of wireless networks (especially low-resource networks).

For this third edition of the DARWiN workshop, we selected 3 papers. All publications have been peer reviewed by 3-4 PC members. We would like to express our gratitude and our thanks to the international program committee members for their expertise and their very constructive reviews. Their helpful and constructive remarks allowed the authors whose papers were accepted to improve the quality of their work.

We hope that DARWiN will provide opportunities to attendees to exchange innovative ideas about their various practices and experiences, and hopefully also to initiate cooperative projects.

November, 2019

Chairs

Wahabou Abdou, University of Burgundy, France

Ana Roxin, University of Burgundy, France

Jamal Toutouh, University of Malaga, Spain

Blaise Omer Yenké, University of Ngaoundéré, Cameroon

HTBA

Human Tracking and Behaviour Analysis

Editorial

Video processing to analyze human gesture is a hot and promising topic since it was adopted in many various applications as video surveillance, medical monitoring, virtual reality, interaction with machines, etc. The human class is a core concern of research and industry because it points the way towards the artificial intelligence. How can a computer do the same interpretation of a scene that a human can do? The possibilities are endless but are reliant on the effectiveness of primal processes: analyzing and recognizing human gestures and behaviours. This workshop aims to investigate the various meanings, media (2D or 3D captors) and constraints (real-time) that leads to answer to the three mean steps of this problematic: tracking, description and learning. The processes have to be adapted to the particularly complex class of the human. The way to follow movement, describe gesture and recognize behaviours at different level (full body, legs, hand, etc.) will be brought.

For this fourth edition of the HTBA workshop, we received 14 papers from 12 countries. These papers cover various research fields addressed by the workshop. The program committee selected 7 papers for inclusion in the proceedings and presentation at the main conference of SITIS 2019. All submitted papers have been reviewed by at least two reviewers.

We take the occasion to thank all members of the HTBA'19 Program Committee for the time they have spent to provide relevant and detailed review reports. We thank all the authors who have chosen our workshop to expose their works for the diversity of their contributions. Finally, we are extremely grateful to the SITIS organizers for having hosted this new edition of the workshop. We wish you enjoy the workshop and share your knowledge, perspective and expertise in the field.

November, 2019

Chairs

Cyrille Migniot, ImViA, Université de Bourgogne, France

Fakhreddine Ababsa, Institut Image, LISPEN, Arts et Métiers ParisTech, France

IWAIPP

Artificial Intelligent Approaches for Image Processing

Editorial

The 4th International Workshop on Artificial Intelligent Approaches for Image Processing (IWAIPP 2019) in collaboration with the 15th International Conference on Signal Image Technology & Internet Based Systems (SITIS 2019) held on 26-29 November 2019 - Sorrento (NA), Italy, has been held since 2016 for the first time. The goal of workshop is to bring together all researchers who have expertise in area of artificial intelligence in image processing approaches from diverse working groups on real world systems for commercial, industrial and military applications. This workshop aims to be academic forum for the high quality research articles that address broad challenges on both theoretical and application aspects of artificial intelligence in image processing. Colleagues from diverse academic faculties, schools and industrial sectors are very welcome to join and contribute their research work that stimulates the ongoing steps to reach the higher quest on the application of artificial intelligent approaches in image processing challenges.

The Program Committees and Chairs of IWAIPP workshop have selected full papers submitted to review for oral presentation which earned the overall positive scores from at least two reviewers during reviewing process. We would like to thank the international program committees for their great effort in making the reviewing process eventually successful with great valuable comments to authors of papers for finalizing their quality papers and orally presenting it in Italy.

We are looking forward to meeting with you all during the SITIS' 2019 Conference days in Italy.

November, 2019

Chairs

T. Yingthawornsuk, King Mongkut's University of Technology Thonburi, Thailand

M. Ketcham, King Mongkut's University of Technology North Bangkok, Thailand

N. Chumuang, Muban Chombueng Rajabhat University, Thailand

IWCIM

International Workshop on Computational Intelligence for Multimedia Understanding

Editorial

The International Workshop on Computational Intelligence for Multimedia Understanding (IWCIM) is the annual workshop organized by the working group Multimedia Understanding through Semantics, Computation and Learning (MUSCLE) of the European Research Consortium for Informatics and Mathematics (ERCIM). In this edition, IWCIM took place as a satellite workshop to SITIS 2019 held in Sorrento, Italy on November 26-29, 2019.

Multimedia understanding is an essential part of many intelligent applications in our social life, be it in our households, or in commercial, industrial, service, and scientific environments. Analyzing raw data to provide them with semantics is essential to exploit their full potential and help us manage our everyday tasks. Nowadays, raw data usually come from a host of different sensors and other sources, and are different in nature, format, reliability and information content. Multimodal and cross-modal analysis are the only ways to use them at their best. Besides data analysis, this problem is also relevant to data description intended to help storage and mining. Interoperability and exchangeability of heterogeneous and distributed data is a need for any practical application. Semantics is information at the highest level, and inferring it from raw data (that is, from information at the lowest level) entails exploiting both data and prior information to extract structure and meaning. Computation, machine learning, statistical and Bayesian methods are tools to achieve this goal at various levels

The scope of IWCIM 2019 includes, but is not limited to the following topics:

- Multisensor systems
- Multimodal analysis
- Crossmodal data analysis and clustering
- Mixed-reality applications
- Activity and object detection and recognition
- Text and speech recognition
- Multimedia labeling, semantic annotation, and metadata
- Multimodal indexing and searching in very large data-bases
- Big and Linked Data
- Search and mining Big Data
- Large-scale recommendation systems
- Multimedia and Multi-structured data
- Semantic web and Linked Data
- Case studies

In this edition, 6 papers were submitted of which 4 have been accepted for oral presentation (acceptance ratio 66%).

Organizers

Davide Moroni, ISTI-CNR, Italy

Maria Trocan, ISEP, Paris

Behçet Uğur Töreyn, Istanbul Technical University

KARE

Knowledge Acquisition Reuse and Evaluation

Editorial

Knowledge Management (KM) is one of the key progress factors in organizations. It aims at capturing explicit and tacit knowledge of an organization in order to facilitate the access, sharing, and reuse of that knowledge as well as creation of new knowledge and organizational learning. KM must be guided by a strategic vision to fulfill its primary organizational objectives: improving knowledge sharing and cooperative work inside the organization; disseminating best practices; improving relationships with the external world; preserving past knowledge of the organization for reuse; improving the quality of projects and innovations; anticipating the evolution of the external environment; and preparing for unexpected events and managing urgency and crisis situations. Several techniques can be considered, according to the type of organization, its needs and its culture: knowledge-based approaches, document-based approaches, workflow-based approaches, CBR-based approaches, CSCW and cooperative approaches, ontology-based approaches, corporate Semantic Webs, Semantic Web Services approaches, Web-based approaches, agent-based approaches, distributed OMs, etc. Several scenarios of KM can be tackled through OMs: project memory, skills management, communities of practice, strategic or technological watch, etc.

This workshop will focus on the theoreticians and practitioners concerned with developing methods and systems that assist the knowledge management process and assessing the suitability of such methods. Thus, the workshop includes all aspects of acquiring, modeling and managing knowledge, and their role in the construction of knowledge-based systems. Knowledge acquisition still remains the bottleneck for building a knowledge-based system. Reuse and sharing of knowledge bases are major issues and no satisfactory solutions have been agreed upon yet. There is a wide range of research. Much of the work in this field has been knowledge acquisition. The advent of the age of digital information has brought the problem of knowledge reuse and knowledge evaluation. Our ability to analyze, evaluate and assist user in reusing knowledge present a great challenge of the next years. A new generation of computational techniques and tools is required to support the acquisition, the reuse and the evaluation of useful knowledge from the rapidly growing volume of information. All of these are to be discussed in this workshop.

We hope that you enjoy attending the KARE workshop and that you find in its sessions and proceedings a challenging resource for your present and future research work.

November, 2019

Chairs

Davy Monticolo, Université de Lorraine, France

Anass El Haddadi, University of Al-Hoceima, Morocco

I-MIRA

Intelligent Multimedia Information Retrieval and Applications

Editorial

The explosive growth of online multimedia and other social media appearing on mobile, wearable and other devices has become extremely accelerated in recent years. The Intelligent Multimedia Information Retrieval and Applications (I-MIRA) workshop is based on emerging interdisciplinary multimedia research and systems dealing with conventional and big multimedia data. In 2019 the workshop focuses on the research on new methods, applications and services using multimedia analysis and machine learning as well as their applications and services for the retrieval, indexing, classification, semantics, annotation, detection and recognition of multimedia information mostly in big multimedia databases. The workshop also welcomes new topics that can help to establish semantical and contextual relations among users based on the information of their interest.

The I-MIRA workshop received 6 submissions from 4 countries from all over the world this year. After a very severe and careful reviewing process, when more than 3 expert reviewers evaluated each paper, 5 papers were accepted giving us a 83% acceptance ratio. All accepted papers had a high score and written about important topics for the workshop, showing that the average quality of the papers is very high. We hope that the sessions organized in the I-MIRA workshop will provide an opportunity for all participants for fruitful discussions on the scientific and relationship aspects.

We would like to thank to all 42 members of our International Programming Committee for all of their invaluable and time-consuming efforts in writing such up-to-date and high-quality reviews in a very limited time. We are also very grateful to all authors of submitted papers. It would not have been possible to organize this workshop without their contributions reflecting state-of-the-art multimedia research and applications. This edition of I-MIRA would not have been possible without the dedicated work of many people.

We look forward to meeting with you all on the conference in the amazingly beautiful, historical, and popular resort city of Sorrento, Naples, Italy.

November, 2019

Chair

Andrea Kutics, International Christian University, Japan

NAMDAC

Numerical Algorithms and Methods for Data Analysis and Classification

Editorial

The extraction and the assessment of useful information from the huge amount of data available in Bioinformatics, Neurosciences, Cloud Web Services or Climate modelling poses many challenges and difficulties. The goal of the workshop will be to approach and discuss recent trends in data mining, focusing on the analysis and the classification of large data sets using novel methods, numerical models and efficient and reliable algorithmic strategies belonging to the family of clustering and genetic algorithms, neural networking and regression analysis. In particular, we are interested in the emerging techniques for data analysis addressed to relevant real-world applications, in order to share ideas, experiences and research results.

The NAMDAC workshop received 6 submissions from 5 countries from all over around the world this year. After a severe and careful reviewing process, when at least 3 expert reviewers evaluated each paper, 4 papers were accepted giving us a 66.7% acceptance rate. All accepted papers had a positive score, showing that the average quality of the papers is very high. We hope that the sessions organized in the NAMDAC track will provide an opportunity for all participants for fruitful discussions on the scientific and relationship issues.

We would like to thank to all members of our International Programming Committee for their invaluable and time-consuming efforts in writing such up-to-date and high-quality reviews in a very limited time. We are also very grateful to all authors of submitted papers. It would not have been possible to organize this track without their contributions reflecting state-of-the-art multimedia research and applications. This edition of NAMDAC would not have been possible without the dedicated work of many people.

We look forward to meeting you all on the conference in the enchanting city of Sorrento located in the beautiful western coast of Italy.

November, 2019

Chairs

Ardelio Galletti, University of Naples Parthenope, Naples, Italy

Livia Marcellino, University of Naples Parthenope, Naples, Italy

OBIS

Open Business Intelligence Systems

Editorial

Decision-making is a crucial, yet challenging mission in enterprise management. It is still made based on a reactive approach rather than on facts and proactive approaches. This is often due to underprovided in data, unknown correlation between data and goals, conflicting goals and weak defined strategy. Enterprise success depends on fast and well-defined decisions taken by relevant policy makers and business actors in their specific area. Also, traditional Business Intelligence reposes on so-called conventional data warehouses, but difficultly take into account structured or unstructured data such as texts and graphs, nor quickly incoming data, thus inefficiently supporting real-time BI.

Simultaneously, with the emergence of big data-related technologies and the diffusion of data mining and machine learning, new prospects are built-up for analytical and decision-support uses. The increase of structured and unstructured data, the Internet of things, crowdsourcing or social media, coming in huge volumes, is indeed a new opportunity for BI and sparkles new research areas in business intelligent systems.

OBIS can be seen as a collection of decision support technologies and tools for enterprises aimed at enabling knowledge workers such as executives, managers, and analysts to make better and faster decisions. Business Intelligence is currently reinventing itself in a time of technological emerging big data make it possible to explore new opportunities that will revolutionize business intelligence. From there to completely revolutionize business intelligence, and data warehouse based decision support, the Hadoop (development environment) is an excellent complement to such systems. Indeed, the limitations of traditional BI architectures are beginning to be affected, and new applications can be met: the use of unstructured data, sensor data, social media, machine learning and crowd sourcing, huge data volumes to be managed with the enterprise information system integration. The intelligence has always been seen as a separate element of the information system of the company, but with Big Data, this is changing.

The aim of this session is to review the concept of OBIS as an open innovation strategy and address the importance of them in revolutionizing knowledge towards economics and business sustainability. The main objective is to discuss why the concept of BI has become increasingly important and presents some of the top key applications and technologies to implement open BI systems in organizations.

We have selected five full papers for presentation, which had the required score during the reviewing process. All papers were assigned to three members of the program committee for review, and three reviews were recorded for each paper. We would like to thank the international program committee for the support in the reviewing process and for their helpful comments.

November, 2019

Chairs

Abdelaziz Elfazziki, Cadi Ayyad University, Morocco

Mohamed Sadgal, Cadi Ayyad University, Morocco

Zahi Jarir, Cadi Ayyad University, Morocco

Hasna El Alaoui El Abdallaoui, Cadi Ayyad University, Morocco

QUAMUS

Quality of Multimedia Services

Editorial

Today, there is an explosion of multimedia data production and consumption, through a multitude of new services in our connected world. The way users perceive the quality of these services is critical for the content providers and consumers. It is therefore necessary to relate the user centric perspective to the service's Perceptual Quality and QoE (Quality of Experience) to the network-level QoS (Quality of Service).

In line with SITIS tradition to promote interdisciplinary research, QUAMUS workshop is dedicated to the relationship between QoS, Perceptual Quality and QoE in general. It will bring together researchers from academia and industry, to identify and discuss technical challenges, exchange novel ideas, explore enabling technologies, and report latest research efforts.

All papers have been peer reviewed from at least 3 independent reviewers in order to ensure high quality of contributed material as well as adherence to conference topics. The two papers selected by the Scientific Committee reflect the diversity of the areas covered by the workshop.

We are extremely grateful to the SITIS organizers for having hosted this edition of the workshop. Sincere thanks to the authors, the success of the technical program would not be possible without their creativity. Finally, we would like to express our most sincere thanks to the Program Committee members who have so generously volunteered their precious time to support the peer review process.

November, 2019

Chairs

Mohammed El Hassouni, University of Mohammed V in Rabat, Morocco

Hocine Cherifi, University of Bourgogne, France

UBIO

Ubiquitous implicit BIOmetrics and health signals monitoring for person-centric applications

Editorial

According to reliable forecasts, the expected number of connected IoT devices could exceed 25 billion by 2020. An important fraction of this number includes last generations mobile and wearable devices featuring an arsenal of advanced sensors (high speed/depth/multi-focal cameras, finger imaging, accelerometers, gyros, etc.), up to 5G communication capability and growing computing power. These collection of features makes them particularly suited to capture both static and dynamic biometrics, to continuously monitor health signals and/or to provide information about the operating context. These capabilities are expected to enable a new generation of Internet of Biometric Things (IoBT) approaches, which, in turn, will greatly extend the range and the target of "mainstream" biometric applications.

The second edition of the UBIO workshop expands its original scope to the latest research findings and applications concerning transparent acquisition and processing of biometrics and health signals for ubiquitous IoBT-based user authentication and monitoring, outlining new applicative scenarios for mobile biometrics and IoT devices.

We hope that the workshop will represent a valuable opportunity for researchers on different theoretical/application disciplines to meet up with the common objective of moving forward the frontiers of personal biometrics and health monitoring. We are confident that it will constitute an excellent opportunity for the participant to engage in fruitful scientific and technical discussions.

We have selected three full paper for presentation, which were positively evaluated based on the reviewing process. All papers were assigned to three members of the program committee for review, and at least three reviews were recorded for each paper. To this regard, we would like to thank the international Program Committee and external reviewers for the support in the reviewing process and for their helpful comments. We also gratefully thank the SITIS organizers for hosting UBIO 2019, as well as the authors of all papers submitted to the workshop.

November, 2019

Chairs

Modesto Castrillón-Santana, University of Las Palmas de Gran Canaria, Spain

Maria De Marsico, Sapienza University of Rome, Italy

Stefano Ricciardi, University of Molise, Italy

WAI

Workshop on Appearance and Imaging

Editorial

Standard technologies and applications of spectral imaging have grown to an extent to which a specific dedicated workshop may let go of this topic and leave it to be covered by the major conferences in fields like imaging, image processing, and computer vision. Long live spectral imaging, the CoMI (Colour and Multispectral Imaging) becomes the WAI (Workshop on Appearance and Imaging).

With the increasing diversity of manufactured materials, fancy packaging, and 3D prints, with the increasing capabilities for extended reality and common uses of computer graphics, defining the appearance of material has become a major research interest worldwide. There are now several efforts towards soft metrology of appearance (e.g. national initiatives – GDR APPAMAT in France, EU initiatives – ITN ApPEARS, international initiatives – IS&T Electronic Imaging, etc.)

This workshop aims to address uses of multimodal imaging in material appearance related tasks and studies. This could be to use imaging device as a spatial optical measurement devices to relate the perception and the material physical properties, but also other aspects where appearance and imaging are used in pair, such as identifying materials in images by their appearance, etc.

All papers were assigned to three independent reviewers of the program committee, and four papers will be presented. The topics covered by those works are perception of sparkle in coatings, the use of VR headsets for vision research, Reflectance Transformation Imaging and hyperspectral image interaction and visualization.

We want to thank the program committee for the support in reviewing submissions, this event could not happen without their voluntary work.

October, 2019

Chairs

Pierre Gouton, Université de Bourgogne, Franche-Comté

Jon Yngve Hardeberg, Norwegian University of Science and Technology

Jean-Baptiste Thomas, Norwegian University of Science and Technology