

Editor's Note

The International Journal of Interactive Multimedia and Artificial Intelligence - IJIMAI (ISSN 1989 - 1660) provides an interdisciplinary forum in which scientists and professionals can share their research results and report new advances on AI tools or tools that use AI with interactive multimedia techniques. This was the first phrase that appeared into the website of the journal, whose launching had several motivations. First, IJIMAI was established on December 2008 in response to several agents, such as students, teachers, researchers, primarily in Spain and Colombia, who wanted to increase the impact of science in their environment. Second, IJIMAI was established to increase the number of scientific journals developed in Spain into the scope of Artificial Intelligence and Interactive Multimedia; there are very few journals about these topics in our country. Third, since the beginning we believed into an open access project, open for the whole stakeholders. Currently no money is needed to public a contribution in IJIMAI, and no money is needed to read all papers in IJIMAI as well; science should be open to achieve the maximum dissemination of knowledge. Finally, IJIMAI was established with the hope of being a long-term project; this 10th anniversary allows us to affirm that this goal is getting closer.

Since 2008 many changes have happened, the main ones are as follows:

- From 2008 to 2011 we only published one issue per year. These 4 years were very difficult. We had to work hard to find good quality papers.
- From 2012 to 2015 we increased our capacity of publication. We extended our issues from 1 to 4 per year. Also we achieved several indexations in different indexes and databases such as, DOAJ, INSPEC, DBLP, LATINDEX, among others. Many colleagues decided to work with us and they enrolled into the project. They helped us offering IJIMAI to several congresses such as IEEE-DCAI, IBERAMIA, WORLDCIST, etc.; they also helped us working as reviewers, editors and authors. IJIMAI was transformed into a robust project.
- From 2015 to 2018 IJIMAI was indexed at Web of Science through Emerging Science Citation Index. The visibility increased a lot and the number of received papers also increased notably. There are some data that reflect this status as you can read below.
 - Considering the years 2013-2018 the average number of articles per year is 47, while if we only consider the last two years, the average number is 53.
 - All research articles are peer-reviewed through a blind process in which identities of authors and reviewers are hidden.
 - The Editorial Board of IJIMAI is composed of important researchers in Computer Science. With the goal to provide a wide geographic coverage of the journal and its impact, the Editorial Board has members of 23 countries: Argentina, Australia, Bolivia, Canada, China, Colombia, Finland, France, Germany, Greece, India, Ireland, Italy, Japan, Malaysia, Morocco, Norway, Peru, Portugal, Spain, Slovakia, United Kingdom and USA.
 - I should highlight the high internationality of IJIMAI. There is a 66% of international institutions that publish papers in IJIMAI.
 - The current acceptance rate is 0.30.
 - Publication of special issues collaborating with authors of prestigious entities such as Hospital Universitario La Paz of Madrid (Spain) and technology-related companies such as Telefónica, BBVA or Banco Santander (Special Issue on 3D

Medicine and Artificial Intelligence, Special Issue on Advances and Applications in the IoT and Cloud Computing, Special Issue on Big Data and AI, etc.).

- Since the start of the journal in 2008 until December 2018, 365 articles have been published in the journal.
- Taking into account last studies done, calculated with the same parameters than Clarivate Analytics, our impact factor is 1.05.
- Finally, I would like to remark that IJIMAI has been indexed in the annual Ibero-American Journal Ranking, launched by the «Red Iberoamericana de Innovación y Conocimiento Científico» (REDIB) and Clarivate Analytics, appearing in position 27 of this ranking in which 748 journals are listed.

IJIMAI has to thank many colleagues who have helped the journal in many times. Thanks to all of them. However, there are proper names that have to be mentioned because they have been key in this project: Jesús Soto, Oscar Sanjuán, Carlos Montenegro, Juan Manuel Cueva, Enrique Herrera-Viedma, Francisco Mochón, Daniel Burgos, Ainhoa Puente, Elena Verdú and of course Miguel Arrufat.

Also, IJIMAI has to thank all authors for all the papers sent and all the papers published. Without authors there is no journal. As an expression of gratitude, to commemorate the 10th Anniversary, we have awarded the Prize for the most outstanding paper published in these 10 first years. Both quality and impact of the paper have been taken into account when awarding this Prize. The selection process has been as follows:

- A list of finalist papers was obtained from those receiving unless 0.5 citations/month since its publication according to Google Scholar data.
- Each Associate Editor of IJIMAI voted for his/her three favorite papers from those of the list of finalists.
- The winning paper has been the one receiving the highest number of votes.

The winners are Dr. Pekka Siirtola and Dr. Juha Rönning from Finland with the paper *Recognizing human activities user-independently on smartphones based on accelerometer data*, published in June 2012. This is a very interesting research about recognition of everyday human activities in real time using a mobile phone which, according to Google Scholar data, has received 1.8 citations per month.

Given this special occasion, apart from original research articles, we have included three invited papers and testimonials written by key players in this issue. The result is a collection of high-quality papers that reflect the wide scope of the Journal, within the AI field. The research works presented in this issue cover different topics of interest as music creation, simulated sound propagation, factors influencing game users' retention, human computer interaction, human activity recognition, watermarking security, sentiment analysis, multi-issue negotiation, etc. The involved techniques are also diverse as those based on neural networks, particle swarm optimization, fuzzy logic, case-based reasoning, discrete wavelet transform, feature selection, evolutionary learning, multi-objective optimization, etc.

The first paper is an invited work, which is a bibliometric analysis of all the publications in IJIMAI during its first decade. The objective was to identify, through a science mapping, the most relevant structural aspects of these publications, providing a retrospective evaluation. This study has been undertaken by Baier-Fuentes et al. [1], resulting in interesting findings regarding co-citations, bibliographic coupling, co-authorship and the co-occurrence of keywords.

The second invited work is written by Dr. Pekka Siirtola and Dr. Juha Rönig [2], authors of the awarded article above mentioned. In this new article they give an overview of progresses in the field of activity recognition and wearable sensor-based recognition, focusing on introducing their specific work, since the publication of their awarded paper in 2012. Currently, with an increasing market of wearable devices, research in this field presents promising.

Next two articles deal with sound related topics, although these are very different. Padilla and Conklin [3] focus on creative intelligence, proposing a music generator based on the corpus of masses of Palestrina. They combine statistical generation and pattern discovery using a template piece. This template solves the problem of coherence and imitation as fundamental novelty in counterpoint music generation. A first-order Markov model is used to generate two-voice counterpoint in florid style into the patterns selected. The paper concludes with a proposed relationship between musical quality and information content.

The other article about sound concerns simulated spatial sound propagation to provide the sense of realism and immersion in virtual environments. Lakka et al. [4] make an interesting review of the state-of-the-art techniques based on acoustic principles that apply, not only to real rooms, but also to 3D virtual environments such as those used in simulated training or computer gaming.

Regarding gaming, Rada et al. [5] present a novel study on the free-to-play video game industry: using a real database of the users of the “Red Eagle Origins” game, which is based on a famous Spanish TV Series, they measure the impact of TV series and social networks on the main game metrics: activation, retention and monetization.

Next article targets the Human Computer Interface (HCI) topic to improve the people ability to use a computer mouse. Mack [6] proposes an artificial neural network based filter to remove unwanted tremor-induced motion in computer mouse input. The filter is successful at removing a simulated Parkinson’s tremor from computer mouse movements with minimal training data. Thus, this kind of solution can help those having diseases causing some tremor in hands.

Diseases diagnosis is the topic covered by the following articles. Arun et al. [7] present a novel approach for detection of depression using clinical data of people who have undergone a comprehensive assessment for cognitive function, mental health and cardiometabolic disorders. They use varied solutions as a Meta-Cognitive Neural Network (McNN) classifier with Projection-based learning (PBL), XGBoost for feature selection, and Particle Swarm Optimization (PSO) to select the best parameters of the McNN-PBL algorithm. The McNN-PBL classifier helps the clinician identify depressed patients resulting in improved treatment and prevention of progression of depression.

Next work also intends to help clinician to diagnose an illness, diabetes, but the proposed methods are very different, based on the case-based reasoning (CBR) concept. By using a fuzzy decision tree, Benamina et al. [8] integrate fuzzy logic and data mining to improve the case retrieval step in CBR. They achieve to reduce the complexity of calculating the degree of similarity that can exist between diabetic patients who require different monitoring plans.

Ending with the series of health related articles, Ayad and Khalil [9] present a new semi-blind image watermarking system for medical applications. The proposed scheme uses a combination of Singular Value Decomposition and Discrete Wavelet Transform to embed the watermark in a transparent manner and extract it with high fidelity. Simulation results shows its good imperceptibility and high robustness against several attacks.

Research of Gaona-García et al. [10] concerns the limitations associated with irrelevant search results in digital repositories. The authors present recommendations using information visualization

strategies based on Simple Knowledge Organization Systems (SKOS) for the development of navigational search interfaces in digital repositories. The aim is to facilitate the access to learning objects on the basis of knowledge areas.

Nowadays, there is a great amount of digital information growing such as the professional content in repositories or the information produced by users with lots of personal opinions in, for example, social media. Therefore automatic processing of this information is the focus of many recent researches. One of this is the one presented in the article of Dehkharghan [11]. In the field of sentiment analysis, he describes a solution to extract the polarity of texts that uses a semi-automatic methodology to build phrase polarity lexicons. He bases on a premise that indicates that the polarity of the whole phrase cannot be estimated based on the polarity of its parts.

Also related to text mining, Revanasiddappa presents a new feature selection method based on Intuitionistic Fuzzy Entropy (IFE) for Text Categorization [12]. Unlike typical Fuzzy Entropy, which considers only membership degree, IFE considers also non-membership and hesitation degrees, improving handling of uncertainty.

Next work [13] is part of a collaborative decision support system applied to industrial diagnosis. Benkaddour et al. propose a global architecture of a recommender tool that provides diagnostic documents for industrial operators. Documents describing solutions and the information gathered from collaborative sessions and Web 2.0 tools are filtered by the recommendation system to improve the search results taking into account users’ preferences. The aim is to find effective solutions to the breakdowns in a short time to improve productivity of companies.

Applicable also to the business world, the evolutionary learning agent presented by Ayachi et al. is able to estimate its opponent’s deadline and reserve points in a bilateral multi-issue negotiation based on opponent’s counter-offers [14]. They model the learning process as an optimization problem to learn its opponent’s parameters and use a new concession strategy adjustment to improve the agent’s outcome, which is shown to be very close to the best scenario.

Going back to the HCI topic, the paper of Raees and Ullah presents a novel eyes-based interaction technique for navigation [15]. Gestures and positioning of eyes are considered interaction instructions by the system and no extra device is needed other than an ordinary camera. The proposed system is applicable to navigation in 3D interactive virtual spaces as those of 3D gaming and simulation.

Ahmed et al. [16] target the probabilistic load flow problem considering the optimal location and size of Static Var Compensators (SVC) in radial distribution systems. The aim is to minimize the total power loss and voltage deviation. By using Pareto Envelope-based Selection Algorithm II (PESA-II), as multi-objective optimization method, with fuzzy logic decision maker, they achieve to reduce the number of iterations and computation time compared to the Monte Carlo method.

The article closing this issue deals with a very important topic, the target of humanity, which is happiness. Mochón [17] provides a survey of works about the impact of technology in happiness, with special consideration of social networks. Although technology has improved many aspects of our life, people is not happier than in previous generations. This and other contradictions about happiness are commented. The paper goes over positive effects of technology on happiness, as well as negative effects and possible actions to mitigate them, concluding with some reflections of the author.

As above mentioned, there are some colleagues, as the author of this last invited paper about happiness, who have been key in this process of building and consolidating IJIMAI. Below, the testimonials of some of them:

“FOR a long time I had been looking for a good journal. At a conference in 2012, after my lectures, Ruben asked me if I would like to publish in the (young) IJIMAI. After I had looked at the articles in detail, I agreed and was immediately positively surprised. After reviewing some manuscripts, proposing some ideas about the internet presence and my reports of positive experiences to colleagues, I was accepted into the team of “Editorial Board Members” and, sometime later, into the group of “Associate Editors”. Meanwhile I have published regularly in the IJIMAI and I am always happy about the fast response times and the good support. What makes the IJIMAI special for me? There are three points: the constantly increasing quality of the contributions, the fast and always constructive feedback from Ruben and Elena and the fast response times of the reviewers. Elena and Ruben manage again and again to motivate us “as reviewers” to answer quickly and conscientiously. And this is one reason why authors like a journal. The other reason is surely that standard e-mails are avoided as much as possible and every author is taken seriously.”



JÖRG THOMASCHESKI
Hochschule Emden/Leer, Emden (Germany)

“FOR the past 6 years, I have dedicated my professional life to technological entrepreneurship, focusing on the latest technology trends in Silicon Valley. I was truly blessed as I was able to gain experience by working with the most distinguished experts of the field and learning about resilience, and how to stand up again when something does not go as expected. When I look back and think about the origins of IJIMAI, it is inevitable to find a remarkable parallelism between the creation of a startup and the conception of IJIMAI. I remember feeling the same illusion, investing the very same amount of effort, having clear goals, and experiencing a strong organic growth. I also think of this journal as a great family, that continuously nurtures with collaborations, a wider network, and exceptional contents. Therefore, I would like to conclude by dedicating a phrase of Émile Couéme to IJIMAI, as this sensational journal also has a bit of soul, represented in its optimism: “Every day and in every way, you are getting better and better.” Congrats IJIMAI.”



ÓSCAR SANJUÁN MARTÍNEZ
CenturyLink (USA)

“IJIMAI is a journal with a focus on artificial intelligence but with a multidisciplinary character that I find very interesting. I started collaborating with IJIMAI as a referee three years ago. I was lucky when Rubén, the Editor-in-Chief of the journal, offered me to be more involved in the journal activities, being an Associate Editor. I am a researcher in the artificial intelligence field and I love the publishing world so the conjunction of these two subjects was really attractive for me. Currently I am the Managing Director and I really want to take this opportunity to thank every author who has submitted a manuscript to IJIMAI and, especially, to thank every reviewer because the reviewers’ work does not look for a compensation and highly contributes to achieve quality in research publications. The enthusiasm and hard work of Rubén and colleagues from the Editorial Board, the involvement of UNIR, and the highly appreciated collaboration of authors and reviewers, are the key to the achieved milestones until now and more to come.”



ELENA VERDÚ
Universidad Internacional de La Rioja - UNIR (Spain)

“ARTIFICIAL Intelligence (AI) is becoming the engine of the technological revolution that we are witnessing at this moment. AI together with the Internet of Things, Robotics and Big Data are increasingly present in our lives and draw a future of more development and progress that will contribute to improving the quality of our lives and the understanding of the world that surrounds us. There are many advances in AI and applications that are being made in the scientific community, and many international journals that are focusing their publications on AI. IJIMAI is one of the relevant Spanish journals that is serving as a showcase for some of the best AI contributions that are being developed in Computer Science. The Editor in Chief, Ruben Gonzalez, and his team with a serious job have made IJIMAI a quality scientific channel, with a serious referee process, excellent publication time and an attractive presentation. IJIMAI today attracts the attention of many researchers from Spain as well as from Latin American and Asian emerging countries that seek to know the latest advances in AI and disseminate their latest research in AI. I feel honored to collaborate with the journal from the editorial board. I think it is at a very good moment in its life as evidenced by the increase in publications and citations received, but without a doubt the best is yet to come: IJIMAI is going to become in the coming years one of the most important Spanish journals of AI for the dissemination of knowledge in AI in our international scientific community.”



ENRIQUE HERRERA University of Granada (Spain)

“ARTIFICIAL Intelligence (AI) is omnipresent in our daily life and has penetrated almost all research fields. IJIMAI is a pioneering journal that for 10 years ago spotted a hot area of interdisciplinary research that lies at the intersection between AI and interactive multimedia techniques. The journal has evolved over time and is delivering high quality publications thanks to the contributions of authors and editors. We have been indexed by high-quality online references for bibliographic information such as dblp and Web of Science – CLARIVATE and we are actively working on gaining other indexation recognitions.”



ANIS YAZIDI
Oslo Metropolitan University (Norway)

“IJIMAI provides a rare combination of quality content with a fine editing work. Thanks to the thorough selection process and the cunning vision to the future, this publication plays a significant role to the scientific community. Indeed, IJIMAI becomes an irreplaceable resource to be up-to-date, to think of the next step, and to learn on the way.”



DANIEL BURGOS
Universidad Internacional de La Rioja - UNIR (Spain)

“THE collaboration with IJIMAI, preparing a special issue since 2014, has been one of the most enriching experiences in which I have participated during the last years due to its interdisciplinary and innovative character. The freedom I have enjoyed to select the topics has been an interesting challenge and has opened the opportunity for me to work on various aspects that are located on the frontier of research and to make contact with researchers from all over the world.”



FRANCISCO MOCHÓN MORCILLO
National Distance Education University (Spain)

“**T**HINK about where you were 10 years ago. Well, some people were thinking in how to create the International Journal of Interactive Multimedia and Artificial Intelligence – IJIMAI. This happened 10 years ago, starting was not easy but the first published issue of the journal was achieved in 2008, with several different concepts. One of them, which is very peculiar, is its cover. As everyone can see, covers correspond to own images that own editors have got because of their love for photography. I would like the reader of this note to visit every cover and choose its favourite one.”



CARLOS E. MONTENEGRO

Francisco José de Caldas District University (Colombia)

“**C**ONGRATULATIONS to IJIMAI for 10th anniversary! It has been our great honor to be part of this journey. Our article “Recognizing human activities user-independently on smartphones based on accelerometer data” was published in IJIMAI in 2012. Thanks to IJIMAI and its open access approach, our article has gotten a lot of publicity and readers. In fact, it has been cited almost 150 times. While the IJIMAI’s tremendous achievements over the past ten years are now a reason to celebrate, we hope that this is just a beginning. All the best for the next ten years!”

PEKKA SIIRTOLA AND JUHA RÖNING
University of Oulu (Finland)

To conclude this special Editor’s Note, I want to thank you all for being a part of this project from all the Board of IJIMAI, specially our readers, who I hope enjoy this issue as much as we have enjoyed it during its creation.

Dr. Rubén González Crespo

- [1] H. Baier-Fuentes, J. Cascón-Katchadourian, M.A. Martínez, E. Herrera-Viedma, José M. Merigó. A bibliometric overview of the International Journal of Interactive Multimedia and Artificial Intelligence. *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 9-16.
- [2] P. Siirtola, J. Rönning. Revisiting “Recognizing human activities user-independently on smartphones based on accelerometer data”– what has happened since 2012? *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 17-21.
- [3] V. Padilla, D. Conklin. Generation of Two-Voice Imitative Counterpoint from Statistical Models, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 22-32.
- [4] E. Lakka, A. G. Malamos, K. G. Pavlakis, J. A. Ware. Spatial Sound Rendering – A Survey, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 33-45.
- [5] F. De Rada, A. Monchon, Y. Saez. TV Series and Social Media: Powerful Engagement Factors in Mobile Video Games, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 46-55.
- [6] S. Mack. Removing Unclassified Hand Tremor Motion from Computer Mouse Input with Neural Networks, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 56-60.
- [7] V. Arun, M. Krishna, Arunkumar B.V., Padma S.K., Shyam V. Exploratory Boosted Feature Selection and Neural Network Framework for Depression

- Classification, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 61-71.
- [8] M. Benamina, B. Atmani, S. Benbelkacem. Diabetes Diagnosis by Case-Based Reasoning and Fuzzy Logic, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 72-80.
- [9] H. Ayad, M. Khalil. QAM-DWT-SVD Based Watermarking Scheme for Medical Images, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 81-89.
- [10] P. Gaona-García, C. Montenegro-Marín, E. Gaona-García, A. Gómez-Acosta, Y. Hassan-Montero. Issues of Visual Search Methods in Digital Repositories, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 90-97.
- [11] R. Dehkharghani. Building Phrase Polarity Lexicons for Sentiment Analysis, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 98-105.
- [12] M. B. Revanasiddappa, B. S. Harish. A New Feature Selection Method based on Intuitionistic Fuzzy Entropy to Categorize Text Documents, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 106-117.
- [13] F. Z. Benkaddour, N. Taghezout, F. Z. Kaddour-Ahmed, I. Hammadi. An Adapted Approach for User Profiling in a Recommendation System: Application to Industrial Diagnosis, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 118-130.
- [14] R. Ayachi, H. Bouhani, N. Ben Amor. An Evolutionary Approach for Learning Opponent’s Deadline and Reserve Points in Multi-Issue Negotiation, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 131-140.
- [15] M. Raees, S. Ullah. EVEN-VE: Eyes Visibility Based Egocentric Navigation for Virtual Environments, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 141-151.
- [16] W. Ahmed, A. Selim, S. Kamel, J. Yu, F. Jurado. Probabilistic Load Flow Solution Considering Optimal Allocation of SVC in Radial Distribution System, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 152-161.
- [17] F. Mochón. Happiness and technology: special consideration of digital technology and Internet, *International Journal of Interactive Multimedia and Artificial Intelligence*, (2018), vol. 5, no. 3, pp. 162-168.