Editorial Preface

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This 24th issue of the International Journal of Information Technology and the Systems Approach (IJITSA), contains three accepted papers as regular submission and three accepted papers as extended versions awarded as best papers from the 18th International Conference on Human Computer Interaction *Interacción* 2017, held in Cancun, QR, Mexico, 25 – 27 September 2017. These last three papers were asked to be extended and improved for reaching the expected extension, format and quality level for a research paper in an indexed and international journal like IJITSA.

The first paper is entitled *Design Patterns Formal Composition and Analysis*, and is authored by Halima Douibi and Faiza Belala, both at the Université Abdelhamid Mehri Constantine 2 in Algeria. In this paper, the authors address the problem of using informal or complex formal notations for Software Engineering Design Patterns, and propose the utilization of the Maude logical language of type rewriting system combined with the K semantic definitional framework through the K-Maude tool. They report a new logical language called K-DPL implemented in the K-Maude tool and show its applicability for the formal design of a set of usual Software Engineering design patterns by using the reference Bank case with the *command* and *composite* patterns. The authors compare their proposal with the main competitive approaches reported in the literature and show evidences of benefits providing missed capabilities in previous approaches. This paper, thus, contributes to propose an effective and efficient solution to critical issues found in the design of software and supporting the advances on the Model Driven Architecture (MDA) which pursues the full automatization of software elaboration from requirements and design to executable code.

The second paper is entitled *The extend customer requirement factors-based service level evaluation for manufacturing enterprises: Service level evaluation for manufacturing enterprise*, and is co-authored by Qing Liu, Shanshan Yu, Gang Huang, and Xinsheng Xu, all of them at China Jiliang University in China. In this paper, the authors propose a hybrid fuzzy multiple-criteria decision-making approach combining the Analytic Hierarchy Process (AHP) and the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) for evaluating the Enterprise Customer Service Level (ECSL) for OEMs (Original Equipment Manufacturers). The authors indicate that modern OEM's customers concern with extended requirements such as volume flexibility, flexible delivery, and environmental friendship, along the traditional ones. Thus, the authors propose an integrated evaluation model including Production and Process requirements and implement it with the different decision-making mechanisms aforementioned. An illustrative real example with a sample of 13 middle manufacturing managers in a single enterprise is reported to show evidence of its applicability for elaborating a Service Level metric. This paper, thus, contributes to the Systems Engineering research stream concerned with manufacturing system evaluations with an integrative and novel mechanism which collects the preferences of a set of manufacturing managers with explicit and flexible decision-making mechanisms.

The third paper is entitled *Decision Support System for Assigning Members to Agile Teams*, and is co-authored by Fernando Almeida, Diogo Adão and Catarina Martins, all of them at Polytechnic Institute of Gaya in Portugal. In this paper, the authors address the critical problem

of having suitable teams for software projects when agile approaches are used. Authors raise the concerns reported in the agile approach literature on the impact of having both social and technical well-skilled members in the agile project teams. Thus, they propose a Decision Support System tool designed with a set of criteria from the agile project team literature. The authors build a SCRUM real alike illustrative case and show evidence on the full evaluation process where assumed calculations done by the employees and the software company are accounted helping to project decision maker to create a better team assagnation of members. Thus, this paper contributes to the Software Engineering stream on agile Project Management with innovative solution to the team assagnation of members problem.

The fourth paper is entitled *An Eco-System Architectural Model for Delivering Educational Services to Children with Learning Problems in Basic Mathematics*, and is co-authored by Miguel Ortiz, Jaime Muñoz, Eder Guzman, Juana Canul-Reich and Julien Broisin, at the Universidad Autonoma de Aguascalientes, Mexico (the first, second and third authors), the Universidad Juarez Autónoma de Tabasco, Mexico (the fourth author), and the Institut de Recherche en Informatique de Toulouse, France (the fifth author). In this paper, the authors elaborate a Service-oriented Software Model Architecture in the domain of e-Learning Services, which pursues the efficient and effective delivering of customized learning paths to their target audience (in this case children with problems in the learning of elementary courses on Math). The authors combine the Software Engineering and e-Learning domains for pursuing a solution to a real problem frequently found in Mexican elementary schools. Thus, the authors elaborate their Service-oriented Architectural Model and implement it as a prototype which is tested in pilot mode by two users. The comparative results versus other competitive available and related solutions show initial evidence of improvement. Thus, this paper contributes to the Software Engineering research stream on application on specific domains such as e-Learning.

The fifth paper is entitled *A system to match behaviors and performance of learners from user-object interactions: Model and Architecture*, and is co-authored by Guillermo Hernández-Calderon, Edgard Benítez-Guerrero, Rafael Rojano-Cáceres and Carmen Mezura-Godoy, all of them at the Universidad Veracruzana, Mexico. In this paper, the authors report the design of a system to match behaviors and performance of learners with a smart application (an intelligent desk). Their design considers models of intelligent desk, patterns of user-object interactions from students, and metrics on task performance of users. The smart application prototype provides four main functions: data collection, behavior recognition, task performance assessment, and computing derivations from behaviors and task performance of users. The authors test its smart application prototype by using input data from a previously reported case in the domain of Relational Algebra. The initial results can be considered favorable for helping teachers to identify learning problem situations with less effort and more rapid than through a non-tool manual process. Thus, this paper contributes also to the combined Software Engineering and e-Learning research streams with innovative potential solutions to critical learning problems in Elementary Schools.

Finally, the sixth paper is entitled *Wheelchair Control based on Facial Gesture Recognition*, and is co-authored by Emmanuel Vázquez, Manuel Martin-Ortiz, Ivan Olmos-Pineda, and Arturo Olvera-Lopez, all of them at the Autonomous University of Puebla, Mexico. In this paper, the authors report the design and prototype implementation of an intelligent hybrid system which uses Neural Networks mechanisms for users with limited mobility capacities in order to control a wheelchair with user face gesture recognitions. The authors indicate that their initial prototype is a low-cost and more robust to changes in illumination or rotation of user images captured regarding competitive solutions reported in the literature. Thus, this last paper also contributes to the System Engineering research stream on the design of innovative and trustworthy, and cost-efficient devices for improving real-life situations from some target users (in this case of mobility disability).

Hence, we consider that this 24th IJITSA issue contributes –as all published past issues- to advance our scientific and practical knowledge of structures, mechanisms, and plausible solutions

on relevant theoretical and real problems found in the fields of Information Technology, Software Engineering, Systems Engineering and/or Philosophy of System Sciences, from an interdisciplinary systems paradigm (Mora et al., 2008). High-quality research papers that contribute to this aim are welcome in this journal. Finally, we (Editor-in-Chief and Associate Editors of IJITSA) express our sincere gratitude to paper's authors, reviewers, and IGI editorial staff, for their valuable participation and assistance.

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Mora, M., Gelman, O., Frank, M., Paradice, D. B., Cervantes, F., & Forgionne, G. A. (2008). Toward an Interdisciplinary Engineering and Management of Complex IT-Intensive Organizational Systems: A Systems View. *International Journal of Information Technologies and Systems Approach*, *1*(1), 1–24. doi:10.4018/ jitsa.2008010101