

# PROLOGUE TO THE SPECIAL ISSUE: APPLICATIONS OF APPLIED MATHEMATICS IN REAL WORLD PROBLEMS

The challenge of real world problems poses the needed of developing new theoretic models , applying some well-known methods as well a getting together existing softwares. This issue is constituted by a set of papers where the authors describe the complexity of the problems to be solved and justify the methods used for deriving useful recommendations to the decision makers.

The complexity of real-world phenomena has motivated the development of theories, where the experts may introduce their criteria. This facts are modeled not only using popular quantitative models of statistics but also working within Fuzzy-sets, Rough-sets or Neutrosophic work-frames. The papers in this issue are good examples of the creativity of the authors in modeling and of their abilities for deriving practical advises to the clients.

This issue provides presentations and the discussions have a clear nexus with nowadays knowledge and gives an invaluable insight, transcending mere academic work. At its core this issue is an interdisciplinary platform where researchers and practitioners unveil innovations, identifying new trends and challenges, motivated by the complexity of the phenomena ubicated in the boundaries of different sciences.

The contents may be classified in two groups. A first one concerned with social phenomena in Latin America countries and a second one clearly related with important economic problems present in management of accounting, environment and business in Middle East.

The first paper, CALIDAD DE LA EDUCACIÓN SUPERIOR NO PRESENCIAL EN EL DEPARTAMENTO DE JUNÍN, PERÚ: ESTUDIO DE SU SITUACIÓN ACTUAL Y BÚSQUEDA DE ESTRATEGIAS MEDIANTE LOS MAPAS COGNITIVOS DIFUSOS (QUALITY OF NON-FACE-TO-FACE HIGHER EDUCATION IN THE DEPARTMENT OF JUNÍN, PERU: STUDY OF ITS CURRENT SITUATION AND SEARCH FOR STRATEGIES THROUGH FUZZY COGNITIVE MAPS) of Moscoso-Paucarchuco et al. used a fuzzy cognitive map for deriving strategies to follow, for improving the quality of Peruvian non-face-to-face education in the department. The second paper DISEÑO DE UN SISTEMA DE RECOMENDACIÓN BASADO EN LÓGICA DEÓNTICA SOBRE LA INCLUSIÓN REGISTRAL DE BIENES INMUEBLES EN PURÚS, PERÚ (DESIGN OF A RECOMMENDATION SYSTEM BASED ON DEONTIC LOGIC ON THE INCLUSION OF REAL STATE IN THE REGISTRY IN PURÚS, PERU ) of Meza Taípe et al. recommends a system that serves to support individuals in recommending what action to take based on their needs or desires. The third paper titled USO DE HERRAMIENTAS DE INTELIGENCIA ARTIFICIAL Y PRÁCTICAS INVESTIGATIVAS EN UNIVERSIDADES PÚBLICAS DEL PERÚ: UN ESTUDIO BASADO EN LÓGICAS DESCRIPTIVAS (USE OF ARTIFICIAL INTELLIGENCE TOOLS AND RESEARCH PRACTICES IN PUBLIC UNIVERSITIES IN PERU: A STUDY BASED ON DESCRIPTIVE LOGICS) , and due to Ortega Chávez et al., proposes a model based on descriptive logics, which allows the representation and evaluation of knowledge around the use of Artificial Intelligence in state universities in Peru. . Reales Chacón et al. are the authors of MODELO BASADO EN CONJUNTOS SUAVES Y MÉTODOS DE CONJUNTOS APROXIMADOS PARA EL DIAGNÓSTICO DE LA NEUROPATÍA PERIFÉRICA DIABÉTICA (SOFT SET MODEL AND APPROXIMATE SET METHODS FOR DIABETIC PERIPHERAL NEUROPATHY DIAGNOSIS), where they propose a soft set-based model for the diagnosis of diabetic peripheral neuropathy. BÚSQUEDA DE ESTRATEGIAS PARA EL ENFRENTAMIENTO AL DETERIORO DE LA SALUD MENTAL EN PACIENTES CON NEUROPATÍA PERIFÉRICA DIABÉTICA BASADA EN PROCESO JERÁRQUICO ANALÍTICO (SEARCH FOR STRATEGIES TO COPE WITH THE DETERIORATION OF MENTAL HEALTH IN PATIENTS WITH DIABETIC PERIPHERAL NEUROPATHY BASED ON A HIERARCHICAL ANALYTIC PROCESS ) was authored by Reales Chacón, et al. . and it is concerned with determining the correlation between the prevalence of DPN and the patients, who present psychological disorders as well as the use of Analytical Hierarchical Process (AHP) . MATEMÁTICO APLICADO A LA DESCRIPCIÓN DEL PROCESO DE ENSEÑANZA-APRENDIZAJE (MATHEMATICS APPLIED TO THE DESCRIPTION OF THE TEACHING-LEARNING PROCESS ) of Carrión, et al. proposed a system of differential equations to model the teaching-learning process of a person, considering that there are relationships between the contents to be learned. POBREZA SUBJETIVA EN BOGOTÁ Y CUNDINAMARCA: UN MODELO DE RESPUESTA BINARIA USANDO LASSO (SUBJECTIVE POVERTY IN BOGOTÁ AND CUNDINAMARCA: A BINARY RESPONSE MODEL USING LASSO ) deals with a study on the effect of economic and educational aspects is the probability of feeling poor, is the contribution of Henao-Rodríguez et, al.

The other paper related with social phenomena is VALIDACIÓN ESTADÍSTICA DEL USO EXITOSO DEL INSTRUMENTO KTK ADAPTADO PARA MEDIR LAS ALTERACIONES DE LA COORDINACIÓN MOTORA EN EL ANCIANO (STATISTICAL VALIDATION OF THE SUCCESSFUL USE OF THE ADAPTATION OF KTK INSTRUMENT TO MEASURE MOTOR COORDINATION IMPAIRMENTS IN OLDER ADULTS) of Robalino Morales, et al., where the behavior of a well-known instrument is evaluated under particular real life conditions.

A second set of papers are dealing with economical phenomena. MAXIMIZING M&A SUCCESS: LEVERAGING ACCOUNTING EXPERTISE TO IDENTIFY AND EVALUATE HIGH-VALUE TARGETS: A REVIEW of Salman, et al., addresses tactics and models for finding and appraising high-value targets and highlights the importance of accounting expertise in M&A . THE CARBON FOOTPRINT OF IRAQI INDUSTRY: NAVIGATING THE PATH TO SUSTAINABILITY of et al. is concerned with the economy of environment policies .THE ROLE OF DIGITALIZATION IN IMPROVING ACCOUNTABILITY AND EFFICIENCY IN PUBLIC SERVICES of Omar et al. Explore the significant impact of digitalisation on enhancing the effectiveness and accountability of public sector accounting. The next paper THE IMPACT OF MONEY SUPPLY ON INFLATION: AN EMPIRICAL ANALYSIS OF THE IRAQI ECONOMY authored by Abu-Alshaeer et al., in their article examine the relationship between inflation and Iraq's currency supply. Finally the paper titled THE ROLE OF NON-EXECUTIVE TECHNICAL DIRECTORS IN FOSTERING COMPANY INNOVATION of Hassan, et al. analyzed a data-set on inquiries to isolate common threads

These articles underwent rigorous peer review to meet high publication standards.

Prof. Dr. Miguel A. Montero-Alonso  
Universidad de Granada