2014 9th Iberian Conference on Information Systems and Technologies

(CISTI 2014)

Barcelona, Spain
18-21 June 2014

Pages 1-656

IEEE Catalog Number: CFP1403K-POD
ISBN: 978-1-4799-6111-5

Copyright © 2014, AISTI - Associación Ibérica de Sistemas y Tecnologías de Información
All Rights Reserved

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP1403K-POD
ISBN 13: 978-1-4799-6111-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

CONCEPTUALIZATION OF A SUPPORT SYSTEM FOR THE MENTALLY ILL: A PROPOSAL FOR PORTUGAL 1
Tavares, Eugenia Maria Lameiro ; Polonia, Daniel Ferreira

SKY COMPUTING: EXPLORING THE AGGREGATED CLOUD RESOURCES — PART II 7
Monteiro, Andre ; Teixeira, Claudio ; Pinto, Joaquim Sousa

ARCHITECTURE OF INFORMATION SYSTEM FOR MONITORING OF PHOTOVOLTAIC PLANTS 13
Pereira, Antonio Nunes ; Tome, Paulo ; Costa, Paulo Moises ; Pascoal, Jose

OPENEHR AWARE MULTI AGENT SYSTEM FOR INTER-INSTITUTIONAL HEALTH DATA INTEGRATION 19
Vieira-Marques, P. ; Patriarca-Almeida, J. ; Frade, S. ; Bacelar-Silva, G. ; Robles, S. ; Cruz-Correia, R.

MUSIC-AR: SOFTWARE FOR TEACHING CHILDREN MUSIC PERCEPTION 25
Gomez, Leticia Silva ; Martins, Valeria Farinazzo ; Ruiz, Vitor Puzzelo

SBIAES — BUSINESS INTELLIGENCE SYSTEM FOR ANALYSIS OF ACCESS TO HIGHER EDUCATION: THE CASE OF THE POLYTECHNIC INSTITUTE OF COIMBRA 31
Nobre, Tiago ; Trigo, Antonio ; Sanches, Paulo

WORK IN PROGRESS: ONLINE RESOURCE PLATFORM FOR MATHEMATICS EDUCATION 37
Llorens, Marisa ; Nevin, Edmund ; Mageean, Eileen

VDI HEALTHCARE MANAGEMENT: SURGICAL ONCOLOGY, MANAGEMENT MODEL AND FORMALIZATION OF KNOWLEDGE: CASE STUDIES CRC (COLORECTAL CANCER) 41
Gil, C.Redondo ; Martinez, R.Alonso ; Blanco, C.Esteban ; de Francisco, T.Gonzalez ; Elosua, T.Gonzalez ; Chaves, J.Arredondo

RIGOR, ORDER AND SHAPE. LIVIO VACCHINI: VACCHINI HOUSE IN COSTA TENERO (1991–92): DYNAMICS BETWEEN CONSTRUCTION AND ARCHITECTURE 47
Arnella, Laia Vives

EDUCATIONAL EXPERIENCE IN TEACHING GEOGRAPHIC INFORMATION SYSTEMS IN ARCHITECTURE 53
Garcia-Almirall, Pilar ; Dominguez, Ernest Redondo ; Dalmau, Francesc Valls ; Sarmiento, Juan Manuel Corso

PROPOSAL OF A FUNCTIONAL MODEL FOR DIGITAL MEDIATION INITIATIVES IN ELECTORAL CAMPAIGNS 59
de Sousa, Artur Jorge Afonso ; Gouveia, Luis Manuel Borges

REWARD PROJECT: REAL TIME WIDE AREA RADIATION SURVEILLANCE SYSTEM 65
Fernandez, Alberto ; Turco, Elena ; Figueiredo, Carlos ; Tilsner, Dirk ; Forin, Marco

DESIGN OF A PEDAGOGIC INSTRUMENT FOR TEACHING SOFTWARE PROCESS IMPROVEMENT: TEACHING INSTRUMENT FOR UNIVERSITY AND BUSINESS ENVIRONMENTS 71
Alvarez, Maria Clara Gomez ; Villalon, Jose Antonio Calvo-Manzano ; Gasca-Hurtado, Gloria Piedad ; Guilabert, Tomas San Feliu

STAKEHOLDERS ANALYSIS IN THE DEVELOPMENT OF SOFTWARE PROJECTS FOR E-LEARNING IN UNIVERSITY CONTEXTS 78
Romero, Lucila ; Gutierrez, Milagros ; Caliusco, Ma.Laura

PROFESSIONAL DEVELOPMENT OF UNIVERSITY TEACHERS IN A COMMUNITY OF PRACTICE ONLINE 84
de Souza, Ana Cecilia Jorge ; Osorio, Antonio Jose Meneses

KNOWLEDGE MANAGEMENT IN HIGHER EDUCATION INSTITUTIONS: A FRAMEWORK TO IMPROVE COLLABORATION 87
Pinto, Mario

VIRTUAL INTERACTION AND FUNCTIONAL CAPACITY OF THE ELDERLY 91
Soares, Ben Hur ; Pasqualotti, Adriano ; Bertolin, Telma Elita ; Amaro, Fausto ; Gil, Henrique

GLABS: GAMIFICATION FOR LEARNING MANAGEMENT SYSTEMS 97
Villagrasa, Sergi ; Fonseca, David ; Romo, Marc ; Redondo, Ernest

PRODUCTION OF VODCASTS BY GEOLOGY STUDENTS OF THE 12TH GRADE: AN EXPERIENCE IN ANALYSIS 104
Monteiro, Maria Elvira ; Miranda, Guilhermina Lobato

SAGITTARIUS: A TOOL TO ENHANCE THE COLLABORATIBE WORK IN VIRTUAL LEARNING ENVIRONMENTS 110
Sole-Beteta, Xavi ; Navarro, Joan ; Sancho-Asensio, Andreu ; Zaballos, Agustin ; Jimenez-Ruano, Virginia ; Canaleta, Xavi ; Vernet, David

FRAMEWORK FOR APPLICATIONS OF SUPPORT TO THE ACTIVITIES OF INTEGRATED CARE 116
Pavao, Joao ; Carvalho, Sandro ; Queiros, Alexandra ; Rocha, Nelson Pacheco

SOLUTION TO INTEROPERABILITY PROTOCOLS SMARTHOMES 122
Albuquerque, Heldon Jose Oliveira ; de Aquino, Gibeon Soares

TEST VIRTUAL LEARNING ENVIRONMENTS FOR TEACHING NETWORK FOR THE DEAF 128
de Lima Medeiros, Solange Favero ; Paduam, Taisa Cordeiro ; Pansanato, Luciano Tadeu Esteves ; Fabri, Jose Augusto ; LaErario, Alexandre ; Barreto, Fernando

ATTENTION AS A COGNITIVE PROCESS IN A LEARNING MANAGEMENT SYSTEM PLATAFORM 134
Patricia, Etcheverry ; Calixto Alejandro, Maldonado

TRACEABILITY OF CONTRIBUTIONS IN THE CO-CREATION OF PRODUCTS / SERVICES: A CASE STUDY IN A TELECOMMUNICATIONS COMPANY 138
Arias, Jaime Alberto Echeverri ; Palacio, Mauricio Gonzalez ; Palacio, Liliana Gonzalez ; Aristizabal, Miguel ; Arancibia, Jose Gallardo ; Perez, Ana Lucia

ENTERPRISE INSTANT MESSAGING IMPACTS IN HUMAN FACTOR: APPLICATION IN A CONSULTING SERVICES COMPANY IN INFORMATION TECHNOLOGY 144
Laureano, Raul M.S. ; Santos, Hugo F.H. ; Gomes, Joao P.F.

EXOGENOUS FLOATING MARINE DEBRIS: FILLING SEARCH AND DETECTION GAPS USING REMOTE SENSING 151
Paige, Maria ; Painho, Marco

WEB SITE OPTIMIZATION FOR SEARCH ENGINES: AN EMPIRICAL STUDY 155
Silva, Nuno ; Aguiar, Antonio

USING SCRUM IN SMALL TEAMS: COMBINING CASE STUDY WITH GROUNDED THEORY 162
Marum, Simao Filho ; Celso, Medeiros ; Nauber, Gois ; Bessa, Albuquerque Adriano

MODELLING AND VERIFICATION OF SECURITY RULES IN AN OPENFLOW ENVIRONMENT WITH COLOURED PETRI NETS 168
Rojas, Marco Antonio Torrez ; Ueda, Eduardo Takeo ; de Brito Carvalho, Tereza Cristina Melo

WEBSISBRA: GEOGRAPHIC INFORMATION SYSTEM FOR SEISMOLOGICAL DATA ANALYSIS 175
Holanda, Maristela ; Saatkamp, Helumth ; de F.Filho, Henrique P. ; Araujo, George Sand L.

DOCE DESAFIO: SOFTWARE TO CONTROL AND MONITORING OF TYPE 1 DIABETES IN MOBILE DEVICES 180
Carvalho, Edison M. ; Fernandes, Jair R. ; Araujo, Aleteia P.F. ; Holanda, Maristela T. ; Dullius, Jane

REMOTE CONTROL FLYING RC HELICOPTER THROUGH NATURAL USER INTERFACE 186
Palacio, Juan Alejandro Pena ; Arevalo, Santiago Londono

USING ARDUINO AS PEDAGOGICAL STRATEGY IN LEARNING LOGIC PROGRAMMING 192
de Melo, Rosangela Maria ; de Oliveira Feliciano, Fabio Denilson ; Brito, Josilene Almeida ; de Melo Filho, Ivanildo Jose ; Carvalho, Rosangela Saraiva ; Gomes, Alex Sandro

STRATEGIES FOR SUSTAINABLE REGENERATION OF TOURIST SETTLEMENTS ON THE MEDITERRANEAN COAST. APPLYING ICT TO MAPS AND ARCHITECTURAL PROJECTS IN THE CONTEXT OF R & D 197
Martinez, Anna ; Gordon, Jordi ; Martin, Xavier ; Peguero, Anna

PARADIGM-COV: A MULTIMENSIONAL TEST COVERAGE ANALYSIS TOOL 202
Vilela, Liliana ; Paiva, Ana C.R.

SPECIFYING BPMN DIAGRAMS WITH TIMED AUTOMATA: PROPOSAL OF SOME MAPPING RULES 209
Morales, Luis Eduardo Mendoza

DETERMINING SOFTWARE PROCESS CAPABILITY IN CONFORMITY TO THE PROCESS ASSESSMENT MODEL NMX-I-15504 APPLIED TO THE REFERENCE MODEL NMX-I-059 SUPPORTED BY THE AURAP TOOL 215
Angelica, Astorga-Vargas ; Johanna, Morales-Bustamante ; Brenda, Flores-Rios ; Jorge, Ibarra-Esquer

REAL TIME SIMULATION OF ARM PROSTHETICS THROUGH A MYOELECTRIC SENSOR 221
Villegas, Jose M. ; Rodriguez, Jose L. ; Vega, Yuridia ; Mejia, David A. ; Medina-Santiago, A.

GENERATING HYPOTHESES FROM MEDLINE: A NEW APPROACH BASED ON NETWORK ANALYSIS 225
Galvez, Carmen

METHOD TO DETERMINE OPTIMAL HARDWARE PLATFORMS IN HUMAN CENTERED COMPUTING BASED ON NON FUNCTIONAL REQUIREMENTS ANALYSIS 231
Gonzalez, Mauricio ; Gonzalez, Liliana ; Echeverri, Jaime ; Aristizabal, Miguel ; Urrego, German ; Perez, Ana Lucia

CROSS-CULTURAL ADAPTATION AND VALIDATION OF THE ASSESSMENT OF CHRONIC ILLNESS CARE (ACIC): CHRONIC CARE MODEL — INFORMATION FOR CHRONIC DISEASE MANAGEMENT 237
Leal, Filipe ; Morais, Carminda ; Pimenta, Rui

TRAFFIC DIFFERENTIATION IN IEEE 802.15.4 NETWORKS: AN ANALYSIS OVER THE CONTENTION WINDOW 244
Gonzalez, Mauricio ; Gomez, Natalia Gaviria ; Giraldo, German Urrego ; Molina, Andres Gil

INTELLIGENT SYSTEM FOR VALORIZING SOLID URBAN WASTE 250
Reis, Pedro ; Pitarma, Rui ; Goncalves, Celistino ; Caetano, Filipe

KNOWLEDGE TRANFER IN CLUSTERS OF SMES IN THE AUTO PART SECTOR 254
Lozano, Claudia Marcela Riano ; Garcia, Victor Hugo Medina

THE CHALLENGE OF BUILDING A CYBER PHYSICAL SYSTEM AS AN EDUCATIONAL EXPERIENCE 260
Gonzalez-Nalda, Pablo ; Calvo, Isidro ; Etxeberria-Agiriano, Ismael ; Garcia-Ruiz, Alejandro ; Martinez-Lesta, Sergio ; Caballero-Martin, Daniel

INTELLIGENT MANAGEMENT OF URBAN GARDEN IRRIGATION 266
Caetano, Filipe ; Pitarma, Rui ; Reis, Pedro

INTEROPERABILITY FRAMEWORKS FOR COMPETENCIES AND LEARNING OUTCOMES: DATABASES VS ONTOLOGIES 272
Goncalves, Maria Jose Angelico ; Perez, Manuel ; Pimenta, Pedro ; Afonso, Ana Paula

MANGVE MATURITY MODEL (M3): A PROPOSAL FOR A DOCTORAL THESIS 280
de Almeida Neto, Humberto Rocha ; Perrelli, Hermano ; de Maglhaes, Edviges Mariza Campos

SOCIAL NETWORKS SITES ADOPTION AT FIRM LEVEL: A LITERATURE REVIEW 284
Martins, Jose ; Goncalves, Ramiro ; Pereira, Jorge ; Oliveira, Tiago ; Cota, Manuel Perez

BIBLIOGRAPHIC RESOURCES MANAGER USING KNOWLEDGE MAPS 290
Morales, Germania Rodriguez ; Carrion, Samanta Cueva ; Granda, Marco Vivanco

AAL SYSTEMS AND SERVICES FOR END USERS: ARE THE AT MODELS AND FRAMEWORKS SUITABLE FOR PRESCRIPTION AND SELECTION? 296
Alvarelhao, Joaquim ; Queiros, Alexandra ; Cerqueira, Margarida ; Rocha, Nelson Pacheco

IMPLEMENTATION OF SOCIAL TECHNOLOGIES FOR OPEN COURSE WARE OCW PLATFORMS 302
Rodriguez, Germania ; Cueva, Samanta ; Feijoo, Luis ; Gallego, Oscar Marban

HIPSTER: AN OPEN SOURCE JAVA LIBRARY FOR HEURISTIC SEARCH 308
Rodriguez-Mier, P. ; Gonzalez-Sieira, A. ; Mucientes, M. ; Lama, M. ; Bugarin, A.

A PLATFORM FOR THE DESIGN, SIMULATION AND DEVELOPMENT OF QUADCOPTER MULTI-AGENT SYSTEMS 314
Veloso, Ruben ; Kokkinogenis, Zafeiris ; Passos, Lucio S. ; Oliveira, Gustavo ; Rossetti, Rosaldo J.F. ; Gabriel, Joaquim

ELECTRONIC COMMERCE AS A COMPETITIVE ADVANTAGE: THE SMES FROM TRÁS-OS-MONTES E ALTO DOURO 320
Goncalves, Ramiro ; Gomes, Silvia ; Martins, Jose ; Marques, Carla

DEVELOPMENT OF A METHOD FOR DIRECT CONVERSION OF A PHOTOGRAMMETRIC POINT CLOUD, TO POINTS OF HEAD'S MOVEMENT OF A CNC MILLING MACHINE: (OR 3D PRINTER), FOR REPRODUCTION AND CONSERVATION OF THE ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE, APPLIED TO THE REPRODUCTION OF THE WOODEN ORNAMENTATION IN THE "ROSHAN" 326
Roma, Galdric Santana ; Alitany, Ayman ; Mateu, Lluis Gimenez ; Dominguez, Ernest Redondo

DIGITAL VISITORS AND DIGITAL RESIDENTS: OVERCOMING THE CONCEPT OF DIGITAL NATIVES 333
da Silva Gomes de Oliveira, Eloiza ; Nunes, Jose Mauro Goncalves ; Carvalho, Caio Abitbol ; Rodrigues, Gabriel Moura Souza Miranda

CLOUD COMPUTING E-MAIL SYSTEMS: ANALYSIS OF THE CURRENT SITUATION IN SMES IN PORTUGAL 340
Correia, Jaime ; Aguiar, Antonio ; Pinto, Carlos

REQUERIMENTS ELICITACTION OF RESILIENCE FOR SYSTEMS INFORMATION BASED ON THE MODEL CERT-RMM 347
Jaramillo, H.Danilo ; Palacios, A.Jackeline

STRATEGIC PLANNING IN THE IMPLEMENTATION OF AN E-GOVERNMENT REGIONAL SYSTEM: THE PORTO SANTO CASE 353
Polonia, Daniel Ferreira ; Dias, Goncalo Paiva ; Rafael, Jose Alberto

THE FORMATION OF MEGA-CLUSTERS OF SCHOOLS WITH COVERAGE CRITERIA. A CASE STUDY IN THE TOWN OF CASTELO BRANCO 359
Tome, Jose Antonio Alves Coelho ; Teixeira, Maria Cristina Canavarro ; e Silva, Isabel Cristina Castanheira

APPLICATION OF DATA MINING TECHNIQUES IN THE CHARACTERIZATION OF INTERNAL PERSONNEL TURNOVER 364
de Souza Mendes, Alessandro ; de Sousa, Rafael Timoteo ; Martins, Valerio Aymore ; de Deus, Flavio Elias Gomes

TELEMEDICINE PLATFORM FOR MONITORING DIABETIC RETINOPATHY 370
Lancheros-Cuesta, Diana Janeth ; Tumialan, Antonio ; Giovanni, Jorge ; Perez, Vargas Hector ; Carrizosa, Marcelo

EXPERIMENTAL ANALYSIS OF THE EFFICIENCY OF APPLICATION E-MAGES IN MEDICAL IMAGING VISUALIZATION 376
Filho, Nemesio Freitas Duarte ; Goncalves, Carlos Fernando ; Pizetta, Daniel Cosmo

SYSTEMIC ARCHETYPES FOR VALUE CO-CREATION BASED ON COLLABORATIVE CORES: CASE STUDY AT A TELECOMMUNICATION COMPANY 382
Aristizabal, Miguel ; Urrego, German ; Perez, Ana ; Echeverry, Jaime ; Gonzalez, Liliana ; Gonzalez, Mauricio

BUSINESS PROCESS MODELLING: A STUDY CASE WITHIN THE BRAZILIAN MINISTRY OF PLANNING, BUDGETING AND MANAGEMENT 386
de Sousa, Rafael T. ; de Deus, Flavio ; Aires, Bruno ; Ribeiro, Gabriela ; Araujo, Aleteia P.F. ; Holanda, Maristela ; Vidal, Sandra S.A.N. ; dos Santos, Renan M.G. ; Cortes, Fabiano P.

A MULTICRITERIA APPROACH TO PROJECT PORTFOLIO SELECTION: USING MULTIOBJECTIVE OPTIMIZATION AND ANALYTIC HIERARCHY PROCESS 392
Gomede, Everton ; de Barros, Rodolfo Miranda

INTERFACE DESIGN FOR IT SERVICE MANAGEMENT PRACTICE 399
Nabais, Joao ; Pinto, Alexandre Miguel ; Cruz, Antonio ; Cardoso, Jorge

A PROCESS TO SUPPORT THE CONTINUITY OF PROJECTS BASED ON THE EVALUATION OF SOFTWARE COMPONENTS 406
e Silva, Marco Aurelio Costa ; Albuquerque, Adriano Bessa

USABILITY OF THE CAPE VERDEAN GOVERNMENT WEBSITES 412
do Canto, Sandro ; da Rosa, Isaias Barreto

METODOLOGY INTEGRATION BETWEEN IT GOVERNANCE AND BALANCED SCORECARD: DESIGN BASED ON COMPANIES IN COLLECTION SERVICES 418
Molano, Jose Ignacio Rodriguez ; Saavedra, Erika Julieth Ruiz ; Villalobos, Yeimmy Paola Martinez

PERSONALIZATION DIMENSIONS: A CONCEPTUAL MODEL FOR PERSONALIZED INFORMATION SYSTEMS 424
Reis, Jose Luis ; Carvalho, Joao Alvaro

CRUDI FRAMEWORK APPLICATION — INSURANCE COMPANY CASE STUDY 429
Pereira, Jorge ; Martins, Jose ; Goncalves, Ramiro ; Santos, Vitor

A MODEL FOR HUMAN-COMPUTER TRUST: A KEY CONTRIBUTION FOR LEVERAGING TRUSTFUL INTERACTIONS 435
Sousa, Sonia ; Dias, Paulo ; Lamas, David

FREQUENCY ASSIGNMENT IN MULTI-CHANNEL AND MULTI-RADIO FIWI ACCESS NETWORKS 441
Sabino, S. ; Correia, N. ; Barradas, A.

STATE OF THE ART OF ACCESSIBLE DEVELOPMENT FOR SMART DEVICES: FROM A DISABLE AND NOT IMPAIRED POINT OF VIEW 447
de Sousa e Silva, Joao ; Pereira, Antonio ; Goncalves, Ramiro ; Gomes, Silvia

EXTENSION OF THE BRAZILIAN FEDERAL GOVERNMENT BUDGET ONTOLOGY TO SUPPORT THE REPRESENTATION OF GEOLOCATED HUMAN DEVELOPMENT INDICATORS 452
da Silva, Daniel A. ; de Sousa, Rafael Timoteo ; Martins, Valerio A. ; Exposto, Evandro Nogueira ; Mendonca, Fabio L. ; Veiga, Carlos E.L.

ORDERED MINIMUM COMPLETION TIME HEURISTIC FOR UNRELATED PARALLEL-MACHINES PROBLEMS 458
e Santos, Andre Serra ; Madureira, Ana Maria

STUDENT'S PERCEPTION ABOUT THE USE OF COMMUNICATION TECHNOLOGIES IN PORTUGUESE PUBLIC HIGHER EDUCATION 464
Morais, Nidia Salome ; Ramos, Fernando

THE EXPERIENCE OF USING ICT IN THE DEVELOPMENT OF A SINGULAR ARCHITECTURAL PROJECT: THE ROMANIAN ORTHODOX CHURCH IN BARCELONA 470
Lluis, Gimenez Mateu ; Isidro, Navarro Delgado ; Galdric, Santana Roma ; Ernest, Redondo Dominguez

SUPPORT TOOL FOR THE FORMATION OF WORKING GROUPS IN COLLABORATIVE LEARNING ENVIRONMENTS 477
Sancho-Asensio, Andreu ; Sole, Xavi ; Montero, Jose ; Navarro, Joan ; Canaleta, Xavi ; Vernet, David

AN INSTRUMENT FOR ANALYZING ATTITUDES TOWARDS ELECTRONIC PARTICIPATION SERVICES 483
Castillo, Victor H. ; Acosta-Diaz, Ricardo ; Soriano-Equigua, Leonel ; Alvarez, Jose Luis ; Orozco, Daniel ; Garcia, Heriberto ; Gonzalez, Isabel Maria Gomez ; Medina, David Abdel Mejia

HOW DO MEDICAL AUTHORITIES EXPRESS THEIR SENTIMENT IN TWITTER MESSAGES? 490
Weitzel, Leila ; Aguiar, Raul F. ; Rodriguez, Walter F.G. ; Heringer, Marcela G.

AN INITIAL APPROACH FOR IMPROVING CRM SYSTEMS IMPLEMENTATION PROJECTS 496
Bibiano, Luis H. ; Marco-Simo, Josep M. ; Pastor, Joan A.

COMPUTER-SUPPORTED COLLABORATIVE QUESTIONING. REGIMES OF ONLINE SOCIALITY ON QUORA 502
Rughinis, Razvan ; Marinescu-Nenciu, Alina Petra ; Matei, Stefania ; Rughis, Cosima

BLUE-MOTIC: MONITORING AND CONTROL ENERGY CONSUMPTION POINT IN MOBILE DEVICES 508
Lancheros Cuesta, D. ; Alfonso, Y.D.C.

PREFERENTIAL COMPLEMENTARY LEARNING STYLE-TYPE INDICATOR 514
Roca, Margarita Diaz ; Rodriguez, Gustavo Rodriguez ; Cordeiro, Francisco J.Gil ; Duchement, Jose Pablo Santana

MESTIAM: ESTIMATION MODEL FOR MOBILE APPLICATIONS 519
de Souza, Laudson Silva ; de Aquino, Gibeon Soares

INFORMATION TECHNOLOGY IN EDUCATION: RECENT DEVELOPMENTS IN HIGHER EDUCATION 526
David, Fatima ; Abreu, Rute

SERIOUS GAMES FOR THE ELICITATION OF WAY-FINDING BEHAVIOURS IN EMERGENCY SITUATIONS 532
Almeida, Joao Emilio ; Jacob, Joao Tiago Pinheiro Neto ; Faria, Brigida Monica ; Rossetti, Rosaldo J.F. ; Coelho, Antonio Leca

USAWEB. A MODEL FOR USABILITY EVALUATION WEB INTERFACES 538
Afonso, Ana Paula ; Angelico, Maria Jose ; Lima, Jorge Reis ; Cota, Manuel Perez

AN EXPERT SYSTEM FOR MOBILE DEVICES BASED ON CLOUD COMPUTING 544
Carreto, Carlos ; Baltazar, Mario

TEACHING SOFTWARE PROJECT MANAGEMENT BY USING LEGO MINDSTORM ROBOT 550
Duarte, Alessandro Silveira ; LaErario, Alexandre ; Endo, Andre Takeshi ; Genvigir, Elias Canhadas ; de Lima, Fernando Cesar ; Genvigir, Gabriel Canhadas ; Goncalves, Jose Antonio ; Fabri, Jose Augusto ; da Silva Rocha, Josimar

A SYMBIOTIC SIMULATION PLATFORM FOR AGENT-BASED QUADCOPTERS 554
Veloso, Ruben ; Oliveira, Gustavo ; Passos, Lucio S. ; Kokkinogenis, Zafeiris ; Rossetti, Rosaldo J.F. ; Gabriel, Joaquim

CONTRIBUTIONS TO PROMOTE THE ADEQUACY OF AN APPROACH BASED ON SERVICES TO EHR 560
Gomes, Luis Mendes ; Guerra, Helia ; Bem, Nuno ; Andrade, Carmen

INFORMATION AND COMMUNICATION TECHNOLOGIES AND LIFELONG LEARNING: A POPULATION STUDY 50+ 564
Pascoa, Gina ; Gil, Henrique

METHODOLOGY TO SUPPORT THE USE OF INTERACTIVE SYSTEMS 569
Silva, J.L. ; Silva, J.C.

AVATARS ON PORTUGUESE SIGN LANGUAGE 575
Bento, Jose ; Claudio, Ana Paula ; Urbano, Paulo

THE IMPORTANCE OF THE LEARNER'S CHARACTERISTICS IN DISTANCE LEARNING ENVIRONMENTS: A CASE STUDY 582
Rurato, P. ; Gouveia, L.Borges

AN APPROACH TO ASSESSMENT OF VIDEO GAME-BASED LEARNING USING STRUCTURAL EQUATION MODEL 588
Baron, Holman Bolivar ; Salinas, Sandra Castillo ; Crespo, Ruben Gonzalez

NEW EDUCATIONAL TECHNOLOGIES AND LEARNING EVALUATION: A CHALLENGE PRESENTED TO EDUCATION 594
da Silva Gomes de Oliveira, Eloiza ; Sa, Marcia Souto Maior Mourao ; Carvalho, Caio Abitbol ; Dereczynski, Raphael Silberman

TOWARDS A CONTENTS QUALITY ASSESSMENT MODEL OF HEALTH UNITS WEBSITES 600
Leite, Patricia ; Goncalves, Joaquim ; Teixeira, Paulo ; Rocha, Alvaro

ANALYSIS OF REQUIREMENTS FOR DESIGN OF SUPPORT TOOLS FOR INTEGRAL LEARNING OF CHEMISTRY 607
Mejia, David A. ; Gomez, Luis Villarreal ; Iglesias, Ana ; Castillo, Victor H.

METHOD FOR SORTING AND GROUPING COMPUTERS BASED ON COMPUTATIONAL PROFILE APPLIED TO FORENSIC EXPERT EVIDENCE 611
Barbosa, Akio Nogueira ; Okida, Cleber Morio ; Ruggiero, Wilson Vicente

APPONTO-PRO: AN INCREMENTAL PROCESS FOR ONTOLOGY LEARNING AND POPULATION 615
Santos, Suzane ; Girardi, Rosario

SUPPORTING THE TUTORING PROCESS IN UNIVERSITIES THROUGH A VIRTUAL TUTOR 621
Mejia, David A. ; Castillo, Victor H. ; Fong, Maria B. ; Guerrero, Roberto ; Siero, Luis

COMPUTER-SUPPORTED COLLABORATIVE ACCOUNTS OF MAJOR DEPRESSION: DIGITAL RHETORIC ON QUORA AND WIKIPEDIA 627
Rughinis, Cosima ; Huma, Bogdana ; Matei, Stefania ; Rughinis, Razvan

URBAN FURNITURE FOR SMARTCITY: AUGMENTED REALITY AND SUSTAINABILITY FOR PUBLIC USE 633
Lamsfus, Marta Jimenez ; Cazorla, Marina Puyuelo ; Sanjuan, Lola Merino

PROJECT MANAGEMENT SUPORTADED BY BUSINESS PROCESSMANAGEMENT: EXPERIENCE IN THE BRAZILIAN JUSTICE 639
Costa, Carmo Welkey ; Bessa, Albuquerque Adriano

EVOLVING PROCESS IMPROVEMENT USING MULTI-MODEL ENVIROMENTS AND KNOWLEDGE MANAGEMENT 645
Mirna, Munoz ; Jezreel, Mejia ; Edrisi, Munoz

PERSONAL ENVIRONMENT FOR TEACHING MANAGEMENT IN HIGHER EDUCATION 651
Mas, A. ; Mesquida, A.L. ; Delgado, A.

VOLUME 2

IMPORTANCE OF VISUALIZATION USAGE IN ENTERPRISE DECISION MAKING ENVIRONEMENTS 657
Cota, Manuel Perez ; Castro, Miguel R.Gonzalez ; Dominguez, Javier Alvarez

VALUE AND RISK IN INVESTMENT PORTFOLIOS, CRITICAL VARIABLES CALCULATED FROM AN INTELLIGENT HYBRID SYSTEM BASED ON CBR 664
Estrada, Ernesto Camilo Diaz ; Toro, Carlos Hernan Fajardo

CURRENT STATE OF IT GOVERNANCE IN BANKING 668
Delgado, Agustin Prieto ; Velthuis, Mario Piattini

VALUE AND RISK IN INVESTMENT PORTFOLIOS, CRITICAL VARIABLES CALCULATED FROM AN INTELLIGENT HYBRID SYSTEM BASED ON CBR 674
Estrada, Ernesto Camilo Diaz ; Toro, Carlos Hernan Fajardo

TOWARDS A METHOD TO RETRIEVING BUSINESS PROCESS MODEL FROM SOURCE CODE 678
Cesar, Ivan ; Fertalj, Kresimir ; Batos, Vedran

OPTIMIZATION MODELS IN LAYOUT 684
Bermudez, Giovanny Mauricio Tarazona ; Rojas, Luz Andrea Rodriguez ; Rodriguez, Julio Fernando Ochoa

DENIAL OF SERVICE ATTACKS: AN OVERVIEW 690
Zlomislic, Vinko ; Fertalj, Kresimir ; Sruk, Vlado

ANALYSIS OF STUDENTS' EXPECTATIONS AND SKILLS IN E-LEARNING 696
Ramos, Jorge Luis Cavalcanti ; Silva, Joao Carlos Sedraz ; Rodrigues, Rodrigo Lins ; Gomes, Alex Sandro

AGILE METHODOLOGY IN THE SOFTWARE DEVELOPMENT: CASE STUDY: ELECTORAL JUSTICE OF BRAZIL 702
dos Santos, Vinicius Salustiano Alves ; Canedo, Edna Dias

NEED TO ESTABLISH A METHODOLOGICAL PHILOSOPHY OF COMPETITIVE INTELLIGENCE IN SMES AND RESEARCH GROUPS BASED ON PATENT ANALYSIS 708
Galindo-Melero, Jesus ; Sanz-Angulo, Pedro ; De-Benito-Martin, Juan Jose

SUPPORT INDICATORS FOR EDUCATIONAL LEADERSHIP IN ICT MANAGEMENT: THE ROLE OF INFORMATION SYSTEM 714
Morgado, Evandro ; Henriques, Susana

BUSINESS INTELLIGENCE APPLIED IN DECISION SUPPORT FOR PUBLIC SAFETY 719
de Freitas Neto, Francisco Paulo ; de Castro, Angelica Felix ; das Chagas de Lima, Francisco

AUTOMATIC LOOPS PARALLELIZATION 725
Goncalves, Cristiano Oliveira ; Spolon, Roberta ; Lobato, Renata Spolon ; Manacero, Aleardo ; Lobato, Daniel Correa

IMPROVEMENTS TO EFFICIENT RETRIEVAL OF VERY LARGE TEMPORAL DATASETS WITH THE TRAVELLIGHT METHOD 730
de Carvalho, Alexandre Valle ; Oliveira, Marco Amaro ; Rocha, Artur

GEOGRAPHICAL DATA MODELING WITH THE UML GEOPROFILE AND MDA TRANSFORMATIONS ON THE ENTERPRISE ARCHITECT TOOL 737
Ferreira, Thiago B. ; Stempliuc, Sergio M. ; Lisboa-Filho, Jugurta

GEOCODING OF MICROBLOGS BASED ON ONTOLOGIES 743
Bouchan, Imelda Escamilla ; Ibarra, Marco A.Moreno ; Ruiz, Miguel J.Torres ; Luna, Vladimir ; Quintero, Rolando

ONLINE CORPORATE REPUTATION STRATEGIES. ANALYSIS BASED ON THE COMMAND CHAIN POSITION 747
Lopez-Lopez, David ; Bauza, Guillem Bou ; Rivera, Olga

CLUSTERING BASED TECHNIQUES FOR BUSINESS CLASSIFICATION BASED ON THE BINOMIAL-TACTICAL STRATEGY TO MANAGE THEIR ONLINE REPUTATION MODEL 751
Lopez-Lopez, David ; Bauza, Guillem Bou ; Rivera, Olga

PATINHAS: SERVICE TO LOCATE MISSING ANIMALS 759
Guerra, Andre ; Teresa, Bruno ; Brites, Jose ; Silva, Catarina ; Marcelino, Luis

ONTOLOGY SUPPORTED INFORMATION EXTRACTION FOR DOCUMENT OF EVIDENCE-BASED NURSING DOMAIN 765
Rocha, Flavio ; Lopes, Expedito C.

ANALYSIS ON THE SELECTION OF COURSE AND INSTITUTION OF ENGINEERING STUDENTS 771
Barros, David ; Vasconcelos, Rosa ; Costa, Antonio Pedro ; Reis, Luis Paulo ; Faria, Brigida Monica

GEOMETRIC OPTIMIZATION OF CONSTRUCTIVE PROCESSES IN SAGRADA FAMILIA: RULED SURFACES AND FREEFORM SHAPES DISCRETIZATION 777
Padros, Jeronimo Buxareu ; de Mesa Gisbert, Andres ; Bermejo, David Puig ; Asensio, Francisco Tabanera ; Morist, Esteve Umbert

WEBLAB A LABORATORY CONTROLLED REMOTE ACCESS BY THE INTERNET: A CASE STUDY OF A UAV — UNMANNED AERIAL VEHICLE WITH MOBILE DEVICE 781
Sievers, Fretz ; Rangel, Rodrigo Kuntz ; Neto, Pedro Paulo Calcada

DATABASE SYNCHRONIZATION MODEL FOR MOBILE DEVICES 787
Domingos, Joao ; Simoes, Nuno ; Pereira, Paulo ; Silva, Catarina ; Marcelino, Luis

CO-CREATED VALUE MEASURING THROUGH THE SYSTEM DYNAMICS AND FUZZY LOGIC 794
Aristizabal, Miguel ; Urrego, German ; Echeverri, Jaime ; Aristizabal, Manuela ; Polo, Ricardo

TRANSACTION MANAGEMENT IN TEMPORAL SYSTEM 800
Kvet, Michal ; Matiasko, Karol

TOP TEN NFR TO SURVIVE IN THE "BRAVE NEW WORLD" OF E-GOVERNMENT APPLICATIONS 806
Cares, Carlos

E-VOTING INDONESIA: FRAMING THE RESEARCH 812
Hapsara, Manik

THE LIFE CYCLE OF KNOWLEDGE MANAGEMENT AS ORGANIZATIONAL STRATEGY 818
Torres, Oscar Mayorga ; Bravo, Leonardo Emiro Contreras ; Sotelo, Blanca Cecilia Torres ; Zambrano, Diego Fernando Sanchez

DECISION SUPPORT IN ATTRIBUTE SELECTION WITH MACHINE LEARNING APPROACH 823
Arbex, Wagner ; e Silva, Fabyano Fonseca ; da Silva, Marcos Vinicius Gualberto Barbosa ; de Oliveira, Fabrizzio Conde ; Varona, Luis ; Verneque, Ruida Silva ; Borges, Carlos Cristiano Hasenclever

QUALITY MODELS FOR ONLINE E-GOVERNMENT SERVICES 828
Sa, Filipe ; Rocha, Alvaro ; Cota, Manuel Perez

KNOWLEDGE EXTRACTION TACIT FOR SOFTWARE PROCESS IMPROVEMENT IN A GOVERNMENTAL ORGANIZATION 833
Jezreel, Mejia ; Mirna, Munoz ; Guillermo, Rojo ; Ivan, E.Tinajero ; Heltton, E.Ramirez ; Jesus, M.Garcia

THE EDUCATIONAL ROBOTIC PLATFORM LSMAKER EV1: STANDARDIZATION VS CUSTOMIZATION 840
Albo-Canals, Jordi ; Garcia-Casulleras, Marc ; de Cordoba, Daniel ; Canaleta, Xavi ; Gonzalez-Dachs, Enric
CAPTURING MENTAL MODELS TO MEET USERS EXPECTATIONS 845
Olaverri-Monreal, Cristina ; Goncalves, Joel
RISK FACTORS FOR AN AUDIT PROCESS IN THE DEVELOPED IT ENVIRONMENT: THE CONCEPT OF RESEARCH BASED ON EXPERIENCES FROM SMALL AUDIT PRACTICES IN POLAND 850
Maciejewska, Izabela
DISCOVERING SEMANTIC RELATIONS FROM UNSTRUCTURED DATA FOR ONTOLOGY ENRICHMENT: ASSSOCIATION RULES BASED APPROACH 854
Paiva, Luis ; Costa, Ruben ; Figueiras, Paulo ; Lima, Celson
METHODOLOGY APPLIED PROBLEM-BASED LEARNING IN TEACHING HCI: A CASE STUDY IN USABILITY EVALUATION OF AN ONLINE COURSE 860
Correa, Ana Grasielle Dionisio ; Martins, Valeria Farinazzo
USABILITY INSPECTION OF A SMART TV 866
Martins, Valeria Farinazzo ; Correa, Ana Grasielle Dionisio ; de Paiva Guimaraes, Marcelo
THE USE OF COMPUTATIONAL TOOLS IN TEACHING PHARMACOLOGY: A SYSTEMATIC REVIEW ON THE TOPIC 872
Rauta, Leonardo Ronald Perin ; Batista, Alex Fernando ; da Rocha Fernandes, Anita Maria
CLASSIFICATION OF OPAQUE EXTERIOR WALLS OF BUILDINGS FROM A SUSTAINABLE POINT OF VIEW: THE VERTICAL ENVELOPE AS A TOOL FOR SUSTAINABLE DESIGN 878
de Leon Brajkovich, Michelle Sanchez ; Audi, Nuria Marti
AUGMENTED REALITY ON HBBTV, AN HYPERVIDEO APPROACH 885
Bibiloni, Toni ; Mascaro, Miquel ; Palmer, Pere ; Oliver, Antoni
DESIGNING A MULTIPLATFORM PIPELINE FOR 3D SCENES 891
Evans, Alun ; Agenjo, Javi ; Blat, Josep
UBIQ-IDEAS MACHIN: UBIQUITOUS COMPUTING SYSTEM TO SUPPORT CREATIVE IDEAS GENERATION SESSIONS IN OPEN INNOVATION 895
Gonzalez, Liliana ; Echeverri, Jaime ; Gonzalez, Mauricio ; Aristizabal, Miguel ; Perez, Ana Lucia ; Giraldo, German Urrego
ELECTRONIC GAMES FOR CURRICULAR LEARNING IN MOTHER AND FOREIGN LANGUAGES 901
Moura, Adelina
THE USE OF RESPONSE SYSTEMS IN THE LEARNING-TEACHING PROCESS 906
Azevedo, Paula ; Ferreira, Maria Joao
DESIGN AND EVALUATION OF A WEB ENVIRONMENT FOR KNOWLEDGE MANAGEMENT SOFTWARE PROCESS IMPROVEMENT: USER-CENTERED APPROACH 912
Claudia, I.Martinez-Alcala ; Jose, A.Calvo-Manzano ; Magdalena, Arcilla-Cobian
STRATEGY ON SOCIAL NETWORKS OF THE MOBILE TELECOMMUNICATIONS COMPANIES OPERATING IN PORTUGAL: PERCEPTION OF USERS 920
da Fonseca, Antonio Ferreira ; Alturas, Braulio ; Martins, Antonio
ITIL MATURITY MODEL OF IT OUTSOURCING: EVIDENCE FROM A "LEADING USER" 926
Alojail, Mohammed ; Corbitt, Brian
PROPOSAL FOR BASIC CONTENTS THE SUBJECTS OF DATABASE IN GRADUATE STUDIES IN COMPUTER SCIENCE AT THE SPANISH UNIVERSITIES ADAPTED TO THE EHEA 931
Contreras, Juan Angel ; Arias, Juan ; Luengo, Ricardo ; Casas, Luis Manuel
ASSESSMENT OF SATELLITE-IMAGE FUSION USING FAST HAAR WAVELET TRANSFORM AND CONTOURLET 937
Daza, Ruben Javer Medina ; Cardona, Erika Sofia Upegui ; Pineda, Fernando ; Ardila, Oscar
GEOSPATIAL RECOMMENDER SYSTEM FOR THE LOCATION OF HEALTH SERVICES 943
Avila-Vazquez, Daniela ; Lopez-Martinez, Maria ; Maya, Dafne ; Olvera, Xochitl ; Guzman, Giovanni ; Torres, Miguel ; Quintero, Rolando ; Quintana, Ismael
INTERPLAY BETWEEN HUMAN-COMPUTER INTERACTION AND SOFTWARE ENGINEERING 947
Ogunyemi, Abiodun ; Lamas, David
TEACHING REQUIREMENTS ELICITATION SUPPORTED BY THE MODEL BLENDED MOBILE LEARNING MOBILITY AND CLOUD 957
Moreira, Fernando ; Ferreira, Maria Joao
THE COLLAPSE OF CULTURAL UTOPIA AND THE BIRTH OF TECHNO-UTOPIA 964
Batuca, Filipe ; Cardoso, Luis ; Gil, Henrique

REPAIRABLE SPARE PARTS MANAGEMENT SIMULATOR 970
Duran, Orlando ; Ugarte, Rodrigo
SEMANTIC SIMILARITY IN GEOGRAPHIC INFORMATION RETRIEVAL FOR DECISION MAKING 974
Machado, Neili ; Balmaseda, Carlos ; Montoyo, Andres
PUBLIC ADMINISTRATION ONLINE TRANSPARENCY: DEFINING THE INFORMATION ITENS TO DISCLOSE FROM A CITIZENS' PERSPECTIVE 980
Lourenco, Rui Pedro ; Rolas, Helena ; Jorge, Susana
FUZZY CREDIBILITY FOR MIXING DIFFERENT DATA SOURCES IN EVALUATING OPERATIONAL RISK: MODELLING OPERATIONAL RISK 985
Bonet, Isis ; Pena, P.Alejandro ; Lochmuller, Christian ; Patino, Alejandro
SCIENTIFIC COMPUTING OVER THE WEB IN VARIOUS PROGRAMMING LANGUAGES: SOLVING PROBLEMS IN FORTRAN, C, AND OCTAVE 991
Casquilho, Miguel ; Cunha, Marco
BOTANICAL IDENTIFICATION OF AMAZONIAN SPECIES THROUGH PATTERNS RECOGNITION OF WOOD AND ESSENTIAL OIL: A FRAMEWORK BASED ON ONTOLOGY 997
da Ponte, Marcio Jose Moutinho ; Lima, Celson Pantoja
SOCIAL MEDIA ENGAGEMENT AS AN E-COMMERCE DRIVER, A CONSUMER BEHAVIOR PERSPECTIVE 1001
Frutos, Sergio Martin ; Giones, Ferran ; Miralles, Francesc
IMPROVED COMMUNICATION IN DISTRIBUTED AGILE SOFTWARE DEVELOPMENT 1007
dos Santos, Leonardo Sanches ; L'Erario, Alexandre ; Genvigir, Elias Canhadas ; dos Santos Domingues, Andre Luis ; Fabri, Jose Augusto
ACADEMIC BROADCASTERS: INTERACTIONS, COLLABORATIONS AND KNOWLEDGE 1013
Texeira, Marcelo Mendonca ; Leao, Marcelo Brito Carneiro ; de Farias, Ivaldir ; Paiva, Micaias ; Menezes, William ; Nogueira, Lenildo ; Alves, Joel
PERSON-ORIENTED INTERFACE TRANSPARENT ACCESS TO INTERPERSONAL COMMUNICATION SERVICES 1017
Curiel, Pablo ; Pretel, Ivan ; Lago, Ana B.
TOWARDS A RECOMMENDER SYSTEM FOR DIGITAL RESOURCES BASED ON SOCIAL ASSESSMENTS: EXPERIMENT IN AN EDUCATIONAL CONTEXT 1024
Leal, J.L.Delgado ; Rodrigo, C. ; Garcia-Serrano, A.
USING THE CLOUD TO BUILD A COMPUTING LAB 1030
Alves, Samuel ; Prata, Paula
REMOTE ASSESSMENT OF HYBRID MOBILE APPLICATIONS: NEW APPROACH IN REAL ENVIRONMENTS 1036
Pretel, Ivan ; Lago, Ana B.
REALIZATION OF AN OFFLINE SYSTEM FOR THE RECOGNITION OF THE HANDWRITTEN NUMERIC CHAINS 1042
Ouchtati, Salim ; Redjimi, Mohammed ; Bedda, Mouldi
EVOLUTION OF LOCAL E-GOVERNMENT MATURITY IN PORTUGAL 1048
Dias, Goncalo Paiva ; Gomes, Helder
DECISIVE FACTORS FOR THE ADOPTION OF TECHNOLOGY IN E-GOVERNMENT PLATFORMS 1053
Freire, Marlon ; Fortes, Nuno ; Barbosa, Jorge
IMPLEMENTATION MODEL FOR SOCIAL LEARNING 1059
Santos, Vitor ; Tavares, Cristina
ICT AND COMPETENCE DEVELOPMENT: A CASE STUDY 1064
Lucas, Margarida ; Moreira, Antonio
DIGITAL EDUCATIONAL RESOURCES SUPPORTING HIGHER EDUCATION STUDENTS' LEARNING 1070
Morais, Carlos ; Miranda, Luisa ; Alves, Paulo
A METHOD FOR DESIGNING AUTOMATIC ASSESSMENT SYSTEMS BASED ON TEACHERS REASONING FOR EVALUATING SUBJECTIVE ENGINEERING STUDENT'S COMPETENCES 1076
Montero, Jose Antonio ; Alias, Francesc ; Badia, David ; Fonseca, David ; Vicent, Lluis
USABILITY EVALUATION IN BRAZIL: A SYSTEMATIC MAPPING 1082
Francisco, Lourival ; Benitti, Fabiane Barreto Vavassori
STUDY OF GUESSABILITY METHOD IN A GAME FOR MULTITOUCH SCREEN 1088
Gutierrez, Marylia ; Nakamura, Ricardo
POSITION ESTIMATION WITH A LOW-COST INERTIAL MEASUREMENT UNIT 1094
Llorach, Gerard ; Evans, Alun ; Agenjo, Javi ; Blat, Josep

AUGMENTED REALITY IN PNEUMATIC CONVEYING SYSTEM: FULLER PUMP DRY MATERIAL LINE CHARGER 1098
Pantoja, Gabriel ; Garza, Luis Eduardo ; Mendivil, Eduardo Gonzalez
APPLICATION OF WEARABLE HUMAN SENSING SYSTEM FOR HUMAN-CG INTERACTION IN AR SPACE 1103
Yoshinaga, Takashi ; Arita, Daisaku
AVATOYS: HIBRID SYSTEM WITH REAL AND DIGITAL PUPPETS 1107
Antonijoan, Marc ; Soler, David ; Miralles, David
CROSS-CULTURAL ADAPTATION AND VALIDATION OF THE ASSESSMENT OF CHRONIC ILLNESS CARE (ACIC): CHRONIC CARE MODEL — INFORMATION FOR CHRONIC DISEASE MANAGEMENT 1113
Leal, Filipe ; Morais, Carminda ; Pimenta, Rui
STATISTICAL STUDY ON CASH BALANCES OF PORTUGUESE COMPANIES 1120
Conceicao, Ana Paula ; Faria, Brigida Monica ; Moreira, Jose Antonio
ANÁLISE DO DESEMPENHO DAS EQUIPAS NO CAMPEONATO DE FUTEBOL PORTUGUÊS 1126
Dias, Leonel
THE INCIDENCE OF AIDS IN PORTUGAL ADJUSTED FOR REPORTING DELAY AND UNDERREPORTING 1130
Oliveira, Alexandra ; Costa, Joaquim ; Gaio, Ana Rita
INSTANCE RANKING WITH MULTIPLE LINEAR REGRESSION: POINTWISE VS. LISTWISE APPROACHES 1135
Brito, Joao ; Mendes-Moreira, Joao
ICT IN SCIENCE CLASSROOMS 1141
Santos, Ivo ; Escudeiro, Paula ; de Carvalho, Carlos Vaz
THE USE OF SCRATCH FOR THE DEVELOPMENT OF 21ST CENTURY LEARNING SKILLS IN ICT 1144
Pinto, Ana ; Escudeiro, Paula
IMPROVING TEACHING AND LEARNING OF SCIENCE USING ICT: WITHIN THE ICT WAYS FOR SCIENCE CLASSROOMS 1148
Sobral, Sonia
TWEETING IN AN EDUCATIONAL COMMUNITY 1150
Sampaio, Jorge Manuel Silveira ; Sobral, Sonia Rolland
APPLICATIONS OF TECHNOLOGIES AND THEIR ADAPTATION TO THE CLASSROOM 1156
Cota, Manuel Perez ; Crespo, Luis Vilan
ELECTRONIC GAMES FOR CURRICULAR LEARNING IN MOTHER AND FOREIGN LANGUAGES 1161
Moura, Adelina
DESIGN OF A PROTOTYPE FOR MODELLING MEMBRANE COMPUTATION BASED ON ECOSYSTEMS IN A CLOUD ENVIRONMENT 1166
Mateo, J. ; Lerida, J.Ll. ; Guirado, F. ; Gonzalez, M. ; Colomer, M.Angels ; Filgueira, Rosa
FEDERATED NETWORK INFRASTRUCTURE APPLIED TO ULTRA-GENETIC SEQUENCING 1168
Corral-Garcia, Javier ; Gomez-Martin, Cesar ; Gonzalez-Sanchez, Jose-Luis ; Lemus-Prieto, Felipe
VIRTUAL DESKTOP INFRASTRUCTURE (VDI) AND REMOTE INFRASTRUCTURE MANAGEMENT OUTSOURCING (RIMO) TECHNOLOGIES FOR IT OUTSOURCING: FI4VDI PROJECT 1171
Marlos, Silva ; Antonio, Teixeira
PROPOSAL OF A SECURE, DEPLOYABLE AND TRANSPARENT MIDDLEWARE FOR INTERNET OF THINGS 1173
Ferreira, Hiro Gabriel Cerqueira ; de Sousa, Rafael Timoteo ; de Deus, Flavio Elias Gomes ; Canedo, Edna Dias
ASSESSING A NANOTHINGS SYSTEM TO MONITOR ENDOCRINE DISEASES AUTOMATOUSLY 1177
Ferreira, Diogo C. ; Reis, Luis Paulo ; Lopes, Nuno Vasco
INTERNET OF THINGS AND CLOUD COMPUTING 1183
Dores, Carlos ; Reis, Luis Paulo ; Lopes, Nuno Vasco
INTERNET OF THINGS: A SYSTEM'S ARCHITECTURE PROPOSAL 1187
Diogo, Pedro ; Reis, Luis Paulo ; Lopes, Nuno Vasco
SECURITY/PRIVACY OF WEARABLE FITNESS TRACKING IOT DEVICES 1193
Zhou, Wei ; Piramuthu, Selwyn
A GENERAL FRAMEWORK FOR SOFTWARE PROJECT MANAGEMENT SIMULATION GAMES 1198
Nassal, Alexander

KHRONOSAURUS, AN ADVENTURE IN TIME 1203
Mesquita, Guida ; Gomes, Telmo ; Amaral, Vitor ; Junior, Gilberto ; Lopes, Pedro Faria ; Alexandre, Isabel
DIGITAL GAMES PLAYED BY PORTUGUESE STUDENTS: GENDER DIFFERENCES 1209
Carvalho, Ana Amelia ; Araujo, Ines Cardoso
THE FIFTH EMPIRE: THE REINTERPRETATION OF PORTUGUESE AND EUROPEAN HISTORY IN AN ACTION ADVENTURE GAME 1215
Coelho, Antonio ; Dias, Leonel ; Almeida, Rui ; Castro, Nuno ; Goncalves, Pedro
MULTIMODAL VS. UNIMODAL BIOFEEDBACK IN VIDEOGAMES: AN EMPIRICAL PLAYER STUDY USING A FIRST-PERSON SHOOTER 1221
da Silva, Goncalo A. ; Nogueira, Pedro A. ; Rodrigues, Rui
DESIGNING PLAYERS' EMOTIONAL REACTION MODELS: A GENERIC METHOD TOWARDS ADAPTIVE AFFECTIVE GAMING 1227
Nogueira, Pedro A. ; Aguiar, Ruben ; Rodrigues, Rui ; Oliveira, Eugenio
CO-CREATION OF A SERIOUS GAME TO DEVELOP COMPETENCES ON THE PRIMARY EDUCATION PROGRAM 1233
Eguia-Gomez, Jose Luis ; Contreras-Espinosa, Ruth S. ; Albajes, Lluis Solano
WORK IN PROGRESS: ONLINE RESOURCE PLATFORM FOR MATHEMATICS EDUCATION 1239
Llorens, Marisa ; Nevin, Edmund ; Mageean, Eileen
MATERIALS FOR A COURSE IN CALCULUS ON SEVERAL VARIABLES: AN EXAMPLE OF INTER-UNIVERSITY COLLABORATION 1243
Calle, Higinio Ramos ; Dios, Araceli Queiruga ; Isidro, Susana Nieto ; de la Villa Cuenca, Agustin ; Sanchez, Gerardo Rodriguez ; Encinas, Ascension Hernandez ; del Rey, Angel Martin ; Gomez, Sonsoles Perez
VISUALIZATION OF FUNCTIONS OF TWO VARIABLES USING MATHEMATICA: (EXPLORING THE PEDAGOGICAL POSSIBILITIES OF THE SYSTEM BEYOND WHAT IS EVIDENT) 1247
Ramos, Higinio ; Nieto, Susana
ARE SPANISH AUDIT INSTITUTIONS COMPLYING WITH BEST PRACTICES FOR TRANSPARENCY AND ACCOUNTABILITY? 1253
Sanchez, Raquel Garde ; Munoz, Laura Alcaide ; Bolivar, Manuel Pedro Rodriguez
MANAGEMENT OF INTERNAL CONTROL MECHANISMS IN ERP FOR CONTINUOUS MONITORING PURPOSES 1258
Marques, Rui Pedro ; Santos, Henrique ; Santos, Carlos
DO MOODLE REPORTS AND LOGS MEET THE NEEDS OF EDUCATIONAL SUPERVISION? 1264
Onan, Arif ; Gurlen, Eda ; Turan, Sevgi
THE USE OF SAMPLING AND CAATS WITHIN INTERNAL AUDIT FUNCTIONS IN THE SOUTH AFRICAN BANKING INDUSTRY 1269
Smidt, Louis ; van der Nest, D.P. ; Lubbe, Dave
ECG BASED BIOMETRIC AUTHENTICATION USING ENSEMBLE OF FEATURES 1274
Ergin, Semih ; Uysal, Alper Kursat ; Gunal, Efnan Sora ; Gunal, Serkan ; Gulmezoglu, M.Bilginer
BINARY FIREFLY ALGORITHM FOR THE SET COVERING PROBLEM 1280
Crawford, Broderick ; Soto, Ricardo ; Suarez, Miguel Olivares ; Paredes, Fernando ; Johnson, Franklin
MAX-MIN ANT SYSTEM TO SOLVE THE SOFTWARE PROJECT SCHEDULING PROBLEM 1285
Crawford, Broderick ; Soto, Ricardo ; Johnson, Franklin ; Paredes, Fernando ; Suarez, Miguel Olivares
THE INVESTIGATION ON THE EFFECT OF FEATURE VECTOR DIMENSION FOR SPAM EMAIL DETECTION WITH A NEW FRAMEWORK 1289
Ergin, Semih ; Isik, Sahin
ROBUST SPEECH RECOGNITION USING CONSENSUS FUNCTION BASED ON MULTI-LAYER NETWORKS 1293
Amami, Rimah ; Manita, Ghaith ; Smiti, Abir
RULE BASE IDENTIFICATION TOOLBOX FOR FUZZY CONTROLLERS 1299
Johanyak, Zsolt Csaba ; Ailer, Piroska
GOOGLE ANALYTICS FOR TIME BEHAVIOR MEASUREMENT IN MOODLE 1305
Filva, Daniel Amo ; Guerrero, Maria Jose Casany ; Forment, Marc Alier
LEARNING ANALYTICS FOR THE PRECISE EVALUATION OF STUDENT EFFECTIVENESS WITH EDUCATIONAL RESOURCES AND ACTIVITIES 1311
Munoz-Merino, Pedro J. ; Ruiperez-Valiente, Jose A. ; Alario-Hoyos, Carlos
MONITORING AND FEEDBACK OF LEARNING PROCESSES IN VIRTUAL WORLDS THROUGH ANALYTICS ARCHITECTURES: A REAL CASE 1317
Cruz-Benito, Juan ; Theron, Roberto ; Garcia-Penalvo, Francisco J. ; Maderuelo, Cristina ; Perez-Blanco, Jonas Samuel ; Zazo, Hinojal ; Martin-Suarez, Ana
VISUAL ANALYTICAL MODEL FOR EDUCATIONAL DATA 1323
Aguilar, Diego Alonso Gomez ; Garcia-Penalvo, Francisco J. ; Theron, Roberto

DESIGN AND DEVELOPMENT OF A LEARNING ANALYTICS SYSTEM TO EVALUATE GROUP WORK COMPETENCE 1329
Fidalgo, Angel ; Conde, Miguel A. ; Sein-Echaluce, Marisa ; Garcia-Penalvo, Francisco J.
DATA ANALYSIS FROM INTERNSHIPS AND COMPLEMENTAR ACTIVITIES FOR IDENTIFYING GAPS IN PEDAGOGICAL PROJECTS ON COURSES OF THE INFORMATION TECHNOLOGY AREA 1335
Lopes, Fabio Silva ; Breternitz, Vivaldo Jose ; da Silva, Leandro Augusto
Author Index