Preface

This volume includes the works presented at our First Regional Consortium for Computing Sciences and Foundation, RCCS 2016, joint with the First International Workshop on Knowledge Requirements: Acquisition and Representation, KRAR 2016, held on October 27–28, 2016 at the Institute for Engineering and Technology, Mexico. This time we have extended our interest to include more general topics related to Computer Science and Artificial Intelligence, AI.

On the RCCS side, there were an invited paper and nine submissions with one withdrawn work. Each submission was reviewed by at least two persons, and on the average 2.63, program committee members. We have decided to accept two papers, giving an acceptance rate of 0.25. See Fig. 1.

General Statistics

Submissions	8
Accepted	2
Acceptance rate	0.25
Reviews	21
External reviewers	0
External reviews	0

Reviewing

reviews for a paper	number of papers
2	5
3	1
4	2

Statistics by Country

country	authors	submitted	accepted	acceptance rate	PC members
Brazil	1	0.33	0.00	0.00	–
Mexico	13	7.67	2.00	0.26	16
USA	–	–	–	–	1
unknown	–	–	–	–	1

Fig. 1. RCCS Statistics.

The program also includes one invited talk, whose work has received a first prize in its category of Physics, Mathematics and Earth Sciences; at the 4th Meeting for Young Researchers in Chihuahua State (4o Encuentro de Jvenes Investigadores en el Estado de Chihuahua), 2016.

Regarding the KRAR workshop, there were ten submissions and one withdrawn paper. The accepted papers were six, giving an acceptance rate of 0.67. Each submission has been reviewed by peer reviewers, and carefully evaluated based on originality, significance, clarity and scientific-technical rigor reported.

This edition of the joint workshop-consortium has been organized by The Institute for Engineering and Technology, IIT/UACJ, at the Autonomous University of Juarez. The aim of the regional consortium is to identify areas of most demand and impact in the region Juarez-El Paso-Las Cruces, in computer sciences, Mathematics and AI. Once being identified, we can exploit them. In particular the aim at exploiting regional needs for the mid and long terms can be a foundation for present and future academic infrastructure.

The purpose of the Consortium is to promote the betterment of computer-oriented curricula in two- and four-year colleges and universities; to improve the use of computing as an educational resource for all disciplines; to encompass regional constituencies devoted to this purpose; and to promote an international liaison among local, regional organizations also devoted to this purpose. Predominantly these colleges and universities are oriented toward research and development both academy and transformation/services industry. The Consortium holds meetings in conjunction with other computer education organizations, on its own, and sponsors sessions and tracks at such meetings. The term meetings of the membership are held at the Institute for Engineering and Technology, at the University of Juarez.

The topics of interest they were classified as follows, and they included (not limited to):

Foundation of Computing Systems: Both logic, mathematics and theory of computing for intelligent systems, which may include
- Logic programming and non-monotonic reasoning
- Knowledge representation
- Automated reasoning
- Non-classical logics
- Artificial Intelligence
- Agent and Intelligent Systems
- Cognitive Systems
- Natural Language Processing

Implementation of computing systems: for innovating emerging R&D problems systems, which may include
- System descriptions, comparisons, evaluations
- Benchmarks, and testbeds
- Prototypes and solvers
- Algorithms and novel techniques for efficient evaluation

Applications of Computing Systems: in the domain of intelligent systems, which may include
- Digital security
- Distributed systems
- Software Engineering
- Novel applications in AI
- Cloud Computing and Big Data
- Integration of several computing paradigms

- Use of AI in formalization of Commonsense Reasoning and other areas of AI
- Languages and algorithms in diagnosis
- Data integration and exchange systems, software engineering and model checking
- Applications to linguistics, psychology and other sciences
- Systems of systems
- Image processing, reconstruction and restoration
- Embedded Systems

On the other hand, the aim of the KRAR workshop is to bring together active researchers in experimental and formal areas of knowledge engineering and software development. Its goal is to provide a forum to exchange and discuss recent advances, results, experiences and lessons learned from the development of intelligent solutions, techniques, methods, strategies and models, to facilitate and make effective knowledge elicitation process and turning it tangible through a representation. The KRAR workshop also attempts to unify the areas of Requirements Engineering, Knowledge Engineering and Software Engineering.

The topics of interest for KRAR 2016 workshop are related with innovative ways that incorporate current advances of Knowledge Requirements (acquisition and representation) from: Cognitive tasks, Hybrid models, Knowledge Discovery, Machine Learning, Natural Language Processing, Intelligent Data Analysis, Soft-Computing, and Statistical Techniques among others.

The topics of interest they were classified as follows, and they included (not limited to):

Knowledge Requirements acquisition from and representation by:
- Cognitive tasks
- Hybrid models of knowledge extraction, whereby machine learning methods are integrated by formal or non formal structures of knowledge representation
- Incremental knowledge bases
- Knowledge discovery
- Meta models
- Machine Learning
- Natural language processing applications
- Ill-Structured domains
- Intelligent Data Analysis on: News, Opinions, Web, Databases
- Ontologies
- Semantic Approaches
- Sentiment Analysis
- Social Collaboration Platforms
- Social Networks
- Soft Computing
- Statistical Techniques

Knowledge Requirements acquisition lifecycle: as the process of discovering the system purpose

- identifying the client needs
- documenting the needs in an suitable to analysis
- implementation

Requirements Engineering: systematic and repeatable techniques for
- completeness
- consistency
- relevance

Knowledge Elicitation: knowledge acquisition from a domain expert to enter into the knowledge base of an expert system

Tacit Knowledge Uses and Management: a class of knowledge difficult to transfer to another person in any form of language
- acquisition
- distribution
- effective use

Knowledge Representation: information about the world in a form that a computer system can utilize to solve complex tasks
- diagnosing a medical condition
- dialog in anatural language

Formal representation and structuring of knowledge flow acquired from ill-structured domains
- simultaneous interactive involvement of multiple sources
- wide-application conceptual structures
- performance of complex tasks

Knowledge Engineering: refering to all-technical scientific and social aspects on knowledge-based systems
- building
- maintaining
- use

Knowledge Management: integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets
- databases
- documents
- policies
- procedures
- previously un-captured expertise and experience on individual workers

The workshop is expected to bring together academic and industrial researchers, developers and practitioners from academia, government, and industry to discuss and exchange recent advances, results, experiences related to development of intelligent solutions, techniques, methods, strategies and models to facilitate and make effective the knowledge elicitation process and turning it tangible through a representation. This workshop also attempts to unify the areas of Requirements Engineering, Knowledge Engineering and Software Engineering. It will feature a keynote and a panel discussion given by researchers in the field.

In the region there are research groups interested in these topics. As a result, this joint consortium is designed to promote cooperation among practitioners and researchers across disciplines who are interested in formal areas of Computer Science, AI and Software Development. The joint efforts of the workshop and consortium were aimed to:

- present innovative theoretical work and original applications of the formal areas of software development and knowledge engineering;
- exchange ideas and to facilitate interaction between researchers of the formal areas of software development and knowledge engineering;
- discuss significant recent achievements in theory and automation based on formal areas of software development and knowledge engineering;
- present critical short- and long-term goals for formal areas of software development and knowledge engineering;
- provide a forum for students to present their current research in formal areas of software development and knowledge engineering, and receive feedback from other students and researchers.

This year we have started the project. Students and researchers provided means to explore ways in which their research may contribute to the identification and addressing of problems of common interest in the region. We thank local research groups; the Institute for Engineering and Technology at the Autonomous University of Juarez, UACJ; the Mexican Council of Science and Technology, CONACYT; The Mexican Ministry for Public Education, SEP; the organizing and scientific committees for their support. Finally, we greatly appreciate the local committee and staff for hosting and supporting our joint consortium and workshop in Juarez. We are also grateful to the EasyChair team for their support.

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