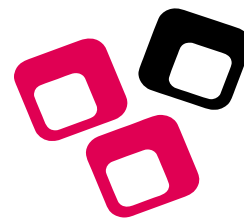


# Central European Conference on Information and Intelligent Systems

CECIIS



24<sup>th</sup>  
International Conference  
2013

Organized by:  
University of Zagreb,  
Faculty of Organization and Informatics  
Varaždin, Croatia

September 18<sup>th</sup> - 20<sup>th</sup>, 2013  
Varaždin, Croatia



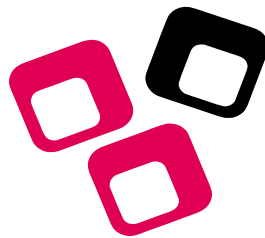
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## PREFACE

The 24<sup>th</sup> Central European Conference on Information and Intelligent Systems (CECIIS 2013) was organized and hosted by the Faculty of Organization and Informatics, Varaždin, Croatia, from 18-20 September 2013. The most important aim of CECIIS is to strengthen the interface between researchers involved in the development and application of methods and techniques in the field of information and intelligent systems.

This proceedings presents 38 scientific papers that were reviewed by the international Program Committee and divided into six sections: Education for Information Society, Information Systems Security, Information and Communication Technologies, Data and Knowledge Bases, Intelligent Information Systems and Software Engineering. Selected papers will be further reviewed by two independent international reviewers with the possibility of being extended and included in the Journal of Organizational and Information Sciences (JIOS), the international scientific journal published by the Faculty of Organization and Informatics. The proceedings also contains one of four invited lectures that were delivered by eminent experts in their respective fields.

Within the 24<sup>th</sup> edition, the Conference also offered several accompanying events. For the third time the Students poster and presentation section as well as the FOI Security Symposium (FSec) were held. 5 poster abstracts and 17 FSec presentations are published separately on-line. For the second time FOI Mobile and embedded development Symposium (f-moed) was held with 11 presentations. This year f-moed also included 48 hour Mobile App Challenge for students. Also, two workshops about software products for librarians were held.

We would like to thank all the authors, presenters, reviewers, session chairs and attendees and, above all, our invited speakers. We acknowledge the help that the Faculty of Organization and Informatics provided, which was crucially important for the overall success of the Conference. We would like to extend our appreciation to the Program and Organizing Committee members.

Finally, we are most grateful to all our sponsors for their financial and material support.

We are confident that inside these covers you will find relevant and interesting papers in the field of information and intelligent systems. We also look forward to your participation in one of many CECIIS conferences to come, and especially at our 25<sup>th</sup> anniversary next year.

September 2013

On the behalf of  
Program and Organizing Committees

Tihomir Hunjak & Sandra Lovrenčić