EDITORIAL

Dear reader,

In front of you is a special issue of AUTOMATIKA which contains selected papers from the 52nd and 53rd International Symposium ELMAR, held in Zadar, Croatia in 2010 and 2011, respectively. The ELMAR symposium has a long tradition and a rich history lasting for over 50 years, and prides itself with covering a wide variety of interesting topics, always reflecting the latest research and development trends in electronics and computer science. ELMAR's focus in recent years has been on image and video processing, multimedia communications, and navigation systems. To reflect ELMAR's broad span of topics and to proportionally cover the various subjects of papers that were submitted in recent years, we have selected eight papers presented in extended form in this special issue. We have organized the papers into two groups. The first group, consisting of five papers, covers various topics in image and video processing and multimedia communications. The second group, consisting of three papers, covers important topics in navigation and signal processing.

*The first group of papers starts with **Automatic Passengers Counting in Public Rail Transport Using Wavelets**, by P. De Potter et al. The paper deals with the problem of counting the passengers in public rail transport systems. The authors present two automatic wavelet-based passenger counting algorithms and, after extensive testing, show significant improvements in accuracy, compared to previous studies. The next paper, **A Robust Procedure for Image Watermarking based on the Hermite Projection Method**, by S. Stanković et al., proposes a procedure for combined image watermarking and compression, based on the Hermite projection method. The efficiency of the proposed procedure is quantified experimentally, showing high robustness to very strong standard and geometrical attacks. **VCL@FER Image Quality Assessment Database**, by A. Zaric et al. is the third paper in this group; it presents a new image quality database that can be used in objective image quality evaluation, as well as to develop and test new image quality measures. The title of the fourth paper is **Intuitive Image Database Browsing to Support Image Annotation**, by G. Schaefer and M. Stuttard. The authors show how an image browsing system can be employed to support efficient and effective (manual) annotation of image databases by using visualization where images are arranged by mutual visual similarity and can then easily be selected and annotated together. The fifth and last paper in this group is **Breast Density Classification Using Multiple Feature Selection**, by M. Mustra et al., where the authors try to automatically determine breast density from mammographic images using a feature selection process for different classifiers based on grayscale features of first and second order.*

*The second group of papers starts with a topic on navigation: **Multi-Stage Satellite Phase and Code Bias Estimation**, by Z. Wen et al. In this paper, a new multi-stage method is proposed for estimation of biases using measurements from a geodetic network. The proposed algorithm is applied to dual frequency GPS measurements from a local geodetic network in Germany and a remarkable bias stability with variations of less than 3 cm over 4 hours is observed. **Polynomial Filtering: To Any Degree on Irregularly Sampled Data**, by P. V. Reyneke et al., is the second paper in this group, it describes a derivation of polynomial filters for irregularly spaced points and illustrates their use in communication systems. The last paper of this special issue is **Performance of Multi Pulse Position Amplitude Modulation for TH IR-UWB Communication Systems**, by*

M. Herceg et al. In this paper the authors show that multi pulse position amplitude modulation significantly outperforms pulse position modulation with respect to bandwidth efficiency.

We would like to thank all the authors for their contributions to this special issue and all the reviewers for their help.

It is our hope that ELMAR will continue its tradition in the years to come, and that many more special issues like this will appear in the future.

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