Preface

This volume collects the papers presented at the 12th International Conference on Latent Variable Analysis and Signal Separation, LVA/ICA 2015. The conference was held during August 25–28, 2015, and was hosted by the Technical University of Liberec, Czech Republic, on the occasion of the 20th anniversary of the Faculty of Mechatronics, Informatics, and Interdisciplinary Studies.

Since its debut in 1999 under the banner of Independent Component Analysis and Blind Source Separation (ICA), the LVA conference series has attracted hundreds of researchers and practitioners and it has continuously broadened its horizons. Today it encompasses a host of additional forms and models of general mixtures of latent variables. Theories and tools borrowing from the fields of signal processing, applied statistics, machine learning, linear and multilinear algebra, numerical analysis and optimization, and numerous application fields offer exciting interdisciplinary interactions.

From 81 submitted papers, 61 were accepted as oral (29 papers) and poster (32 papers) presentations. The conference program put forward five special topics: tensor-based methods for blind signal separation; deep neural networks for supervised speech separation/enhancement; joint analysis of multiple datasets, data fusion, and related topics; advances in nonlinear blind source separation; and sparse and low-rank modeling for acoustic signal processing. Regular topics included theory (dictionary and manifold learning, optimization algorithms, performance analsysis, etc.); audio applications; and biomedical and other applications. A prize (sponsored by Conexant Systems) was awarded to the best student paper in the field of audio signal processing, and the contributions of the student nominees reflected the liveliness of this research topic.

The Organizing Committee was pleased to invite leading experts in these fields for keynote lectures: Tülay Adali (University of Maryland, Baltimore County, USA), Rémi Gribonval (Inria, France), and DeLiang Wang (Ohio State University, USA). Aware of the growing interest in emerging, as well as in classic LVA-related topics among novice and veteran researchers alike, the Organizing Committee decided to precede the conference by a two-day Summer School on Latent Variable Analysis and Signal Separation, with lectures given by Vicente Zarzoso (University of Nice Sophia Antipolis, France), Arie Yeredor (Tel Aviv University, Israel), Martin Haardt (Ilmenau University of Technology, Germany), Ali Taylan Cemgil (Boğaziçi University, Turkey), Emmanuel Vincent (Inria, France), Emanuël Habets (International Audio Laboratories, Germany), Mikkel N. Schmidt (Technical University of Denmark), and Antoine Deleforge (University of Erlangen, Germany).

This year's conference also provided a forum for the 5th Signal Separation Evaluation Campaign (SiSEC 2015). SiSEC 2015 successfully continued the series of evaluation campaigns initiated at ICA 2007, in London. Compared with previous campaigns, it featured two new datasets: full-length professionally produced music recordings and asynchronous recordings of speech mixtures.

The success of LVA/ICA 2015 was the result of the hard work of many people, whom we warmly thank here. First, we wish to thank the authors and the members of the Program Committee, without whom this high-quality volume would not exist. We also express our gratitude to the members of the International LVA Steering Committee for their continued support to the conference, as well as to the SiSEC 2015 organizers and to the local organization committee.

June 2015   Emmanuel Vincent
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