

# Preface

Over the last few decades, graphical models such as Bayesian and Markov networks have become increasingly popular artificial intelligence (AI) approaches. In the International Workshop on Advanced Methodologies for Bayesian Networks (AMBN), we explore methodologies for enhancing the effectiveness of graphical models including modeling, reasoning, model selection, logic-probability relations, and causality. The exploration of methodologies is complemented by discussions of practical considerations for applying graphical models in real-world settings, covering concerns such as scalability, incremental learning, parallelization, and so on. The first AMBN was held in Tokyo (2010).

The second AMBN was held in Yokohama, Japan, during November 16–18, 2015; it was co-sponsored by the Japanese Society Artificial Intelligence (JSAI) and the National Institute of Advanced Industrial Science and Technology (AIST).

This AMBN was the first to celebrate the publication of accepted papers in the *Lecture Notes in Artificial Intelligence* series by Springer. Out of 29 submissions, 26 contributions were selected for presentation at the conference and 15 papers were selected for this volume. Each submission underwent a rigorous review by three members of the AMBN Program Committee, with each committee member reviewing at most two papers.

In addition to the 29 presentations, we were honored to have six invited speakers:

- Russell Almond (Florida State University, USA)
- Aapo Hyvarinen (University of Helsinki, Finland)
- Brandon Malone (Max Planck Institute, Germany)
- Changhe Yuan (Queens College/CUNY, USA)
- Cassio P. de Campos (Queens University, UK)
- Shohei Shimizu (Osaka University, Japan)

We are grateful for their highly inspiring presentations. The six abstracts and three full papers of the six invited talks are contained in this volume.

To conclude, we would like to thank the 23 Program Committee members and nine advisors for their efforts, and for their punctual and high-quality reviews. And, last but not least, we are most indebted to AIST for their financial support.

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