

Preface

The International Cross Domain Conference for Machine Learning and Knowledge Extraction, CD-MAKE, is a joint effort of IFIP TC 5, IFIP WG 8.4, IFIP WG 8.9, and IFIP WG 12.9 and is held in conjunction with the International Conference on Availability, Reliability, and Security (ARES).

CD stands for Cross-Domain and means the integration and appraisal of different fields and application domains to provide an atmosphere to foster different perspectives and opinions. The conference is dedicated to offering an international platform for novel ideas and a fresh look at the methodologies for putting crazy ideas into business for the benefit of the human. Serendipity is a desired effect, cross-fertilizing methodologies and transferring algorithmic developments.

MAKE stands for MACHine Learning and Knowledge Extraction. Machine learning studies algorithms that can learn from data to gain knowledge from experience and to make decisions and predictions. A grand goal is to understand intelligence for the design and development of algorithms that work autonomously and can improve their learning behavior over time. The challenge is to discover relevant structural and/or temporal patterns (“knowledge”) in data, which is often hidden in arbitrarily high dimensional spaces, which is simply not accessible to humans. Machine learning as a branch of Artificial Intelligence is currently undergoing kind of Cambrian explosion and is the fastest growing field in computer science today. There are many application domains, e.g., smart health, smart factory, etc. with many use cases from our daily life, e.g., speech recognition, autonomous driving, etc. The grand challenges are in sense-making, in context understanding, and in decision making under uncertainty. Our real-world is full of uncertainties, and probabilistic inference has enormously influenced Artificial Intelligence generally and statistical learning specifically. The inverse probability allows us to infer unknowns, to learn from data, and to make predictions to support decision making. Whether in social networks, health, or Industry 4.0 applications, the increasingly complex data sets require efficient, useful, and useable solutions for knowledge discovery and knowledge extraction.

To acknowledge here all those who contributed to the organization and stimulating discussions would be impossible. Many people contributed to the development of this volume, either directly or indirectly, so it would be sheerly impossible to list all of them. We herewith thank all colleagues and friends for all their positive and supportive encouragement. Last but not least we thank the Springer management team and the Springer production team for their smooth support.

Thank you to all! Let’s make it!

August 2017

Andreas Holzinger
Peter Kieseberg
Edgar Weippl
A Min Tjoa

Machine Learning and Knowledge Extraction
First IFIP TC 5, WG 8.4, 8.9, 12.9 International
Cross-Domain Conference, CD-MAKE 2017, Reggio, Italy,
August 29 – September 1, 2017, Proceedings
Holzinger, A.; Kieseberg, P.; Tjoa, A.M.; Weippl, E.R.
(Eds.)
2017, XV, 376 p. 129 illus., Softcover
ISBN: 978-3-319-66807-9