Call for Papers
Special Issue of IEEE Transactions on Multimedia
"Multimedia Computing with Interpretable Machine Learning"

SUMMARY

Multimedia is increasingly becoming the "biggest big data," among the most important and valuable source for insight and information. Powerful machine learning algorithms, especially deep learning models such as convolutional neural networks (CNNs), have recently achieved outstanding predictive performance in a wide range of multimedia applications, including visual object classification, scene understanding, speech recognition, and activity prediction. Nevertheless, most deep learning algorithms are generally conceived as black box methods, and it is difficult to intuitively and quantitatively understand the results of their inference. Since this lack of transparency can be a major bottleneck in designing more successful predictive models, there has been an explosion of interest in interpreting the representations learned by these models, with profound implications for research into interpretable machine leaning. This special issue is designed to broadly engage the machine learning and multimedia communities on this emerging yet challenging topic -- tying together many threads which are deeply related but often considered in isolation.

SCOPE

Topics of interest include, but are not limited to:

- Open research challenges and directions for multimedia computing with interpretable machine learning
- New theories, models, and benchmarks for multimedia computing with interpretable machine learning
- Interpretable deep learning architectures and algorithms for large-scale multimedia data
- Interpretability in reinforcement learning for multimedia
- Quantifying and visualizing the interpretability of machine learning algorithms for multimedia
- Causality of predictive models for multimedia
- Verifying, diagnosing and debugging machine learning systems for multimedia
- Fairness, accountability, and transparency in multimedia machine learning
- Novel and inventive applications of interpretability multimedia machine leaning in various fields (e.g., social media, healthcare, smart city, and retail)

IMPORTANT DATES

Submission deadline: ~~March 31, 2019~~ May. 5, 2019
Revision due: ~~July 31, 2019~~ Aug. 11, 2019
Camera-ready due: ~~Sep. 30, 2019~~ Oct. 13, 2019
First notification: ~~June 10, 2019~~ Jun. 30 2019
Final notification of acceptance: ~~Sep. 10, 2019~~ Sep. 29, 2019
Tentative publication date: Late 2019

SUBMISSION PROCEDURE

Papers should be formatted according to the IEEE Transactions on Multimedia guidelines for authors (see: http://www.signalprocessingsociety.org/tmm/tmm-author-info/). By submitting/resubmitting your manuscript to these Transactions, you are acknowledging that you accept the rules established for publication of manuscripts, including agreement to pay all over-length page charges, color charges, and any other charges and fees associated with publication of the manuscript. Manuscripts (both 1-column and 2-column versions are required) should be submitted electronically through the online IEEE manuscript submission system at http://mc.manuscriptcentral.com/tmm-ieee. When selecting a manuscript type, the authors must choose IML Special Issue. All submitted papers will go through the same review process as the regular TMM paper submissions. Referees will consider originality, significance, technical soundness, clarity of exposition, and relevance to the special issue topics above.

GUEST EDITORS

Yonghong Tian, Peking University, China
Susanne Boll, University of Oldenburg, Germany
Rainer Lienhart, University of Augsburg, Germany
Zhu Liu, AT&T Labs Research, USA
Cees Snoek, University of Amsterdam, The Netherlands
Jingdong Wang, Microsoft Research Asia, China