

Petra Perner (Ed.)

# **Advances in Mass Data Analysis of Images and Signals in Artificial Intelligence and Pattern Recognition**

with Applications in Medicine, r/g/b Biotechnology,  
Food Industries and Dietetics, Biometry and Security,  
Agriculture, Drug Discover, and System Biology

15<sup>th</sup> International Conference, MDA 2020  
Amsterdam, The Netherlands, July 20-21, 2020  
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# **15<sup>th</sup> International Conference on Mass Data Analysis of Images and Signals in Artificial Intelligence and Pattern Recognition**

**with Applications in Medicine, r/g/b Biotechnology, Food  
Industries and Dietetics, Biometry and Security, Agriculture, Drug  
Discover, and System Biology**

## **MDA-AI&PR 2020**

**July 20-21, 2020  
Amsterdam, The Netherlands**

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## Preface

The pandemic "Corona" has put us this year before a difficult time. With care we have kept to the hygiene rules not to get an infection with the virus Covid-19. With mask we have got into coaches and trains, have made our purchases or on work worked. Home office was the catchword of these days. The universities and research facilities have maintained only a small emergency company and lectures were held as online lectures. From home we have tried to do our scientific works. In 1-to-1 telephone calls or phone conferences we have organized with our colleagues the work and have discussed important results of the research. Under it the efficiency suffers what is easy to understand.

In the beginning of the pandemic fell the deadline of our conference. Insecurity spread. The figures of the infected persons increased rapidly. The virus spreads out in more and more countries and was further carried by continent to continent. Soon stood the whole world in the spell of Corona. A conference was the last to this in this situation most thought.

In this situation appeared once again which high demands for a scientist are made. It belongs to the job of a scientist that he presents his scientific results in conferences and makes thus his results of a wide public immediately available. A scientist should have well organized his research, should be able to do his scientific tasks and duties in a flexible way, and should have financed his research with suitable financial means. Only those who were meeting these rules could successfully continue in their professional research work.

The best of the best of us are represented with their papers in this volume. They presented themselves personal or in online presentations in the conference. The acceptance rate for the submitted paper of our conference was 33% percent. Because of many refusals because of missing financial means or other reasons the acceptance rate decreased to few percent. This shows once more the excellent quality of these scientists. Their papers are of most excellent quality and expand the state-of-the-art in an excellent way. They follow main topics of MDA and show that MDA is an excellent platform for this kind of research and that MDA has established many important topics.

The proceedings will be freely accessible as an OPEN-ACCESS Proceedings of a wide public so that, the new acquired knowledge on the different subjects is able to spread around quickly worldwide. You can find the proceedings at <http://www.ibai-publishing.org/html/proceeding2020.php>.

In this time, flexibility was a must Because the situation in the USA was still difficult, we have moved the conference to Amsterdam in the Netherlands. Here a variety of the participants was able to do outward journeys. The ones who could not travel, were online present.

The 15th International Conference on Mass Data Analysis of Signals and Images in Artificial Intelligence and Pattern Recognition with Applications in Medicine, r/g/b Biotechnology, Food Industries and Dietetics, Biometry and Security, and Agriculture MDA-AI&PR 2020 held in July in Amsterdam The Netherlands. The conference showed once more that the event is a must for all specialists from research and indus-

try alike who like to stay informed about hot new topics in mass data analysis of signals and images.

The topics range of MDA from work how to handle color transfer for images, a method for automatic decision about the diagnosis rules of patient that suffer mental or physical disorder, to Internet-of-Things solutions with multi-sensor fusion and signal-image encoding for secure data transfer.

The first paper follows the path of color processing and handling in MDA. It expands this topic by color transfer for images with different image characteristics.

The second paper follows the path of automatic diagnosis planning learning for diagnosis a patient disease established in MDA. It expands the state of the art of former papers presented in MDA-AI&PR.

The third paper follows the path of IoT solutions with signal and image devices and how to do the transfer is efficient way.

All three papers show the progress for important topics in Mass Data Handling and Analysis of Signal and Images MDA-AI&PR.

Selected revised papers of this conference as well as contributed papers will be published in the October issue of the International Journal Transaction on Mass Data Analysis of Signals and Images ([www.ibai-publishing.org](http://www.ibai-publishing.org)).

The 16th conference will be held in 2021 in New York again ([www.mda-signals.de](http://www.mda-signals.de)) under the auspices of the World Congress Frontiers on Intelligent Data Analysis DSA 2021 ([www.worldcongressdsa.com](http://www.worldcongressdsa.com)).

We would warmly invite you with pleasure to contribute to this conference. Please come and join us. We are awaiting you.

July, 2020

Prof. Dr. Petra Perner  
Chair of the Conference MDA

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