

Artificial Intelligence in Healthcare. Applications in Oncology and Obstetrics/Gynecology

Abstract. The aim of this lecture is to take the audience on a rollercoaster ride that will go through the ups and downs of Artificial Intelligence (AI) applied in Healthcare, with a particular interest in the fields of Oncology and Obstetrics and Gynecology. In what regards Oncology, we shall pass every single stage that is lived by a cancer patient: the suspicion, the tests, blood work, imaging, etc. In terms of Obstetric and Gynecology, we shall focus on how AI can be applied from the conception till birth. Using Big Data, AI helps the oncologist establish a tailored treatment plan, taking into account everything she/he knows about the patient, from genetic data to her/his way of living. Through every step of the road, we have only one thing on our mind: what are the odds of beating cancer? How long will the patient survive? AI through survival analysis helps us compute this. AI can determine which embryos will be more likely to become a successful pregnancy, whether the fetus has congenital anomalies, and even predict the type of birth. AI algorithms and a statistical analysis handbook, which needs to be performed anytime we are dealing with diagnosis, new clinical trials, new drugs, etc., are presented also. Last, but not least, we shall paint a glimpse of the future, in which a trusted friend, Artificial Intelligence, steps in to lend us a helping hand.



Biography

Smaranda Belciug is an Associate Professor at the Department of Computer Science, Faculty of Sciences, University of Craiova and Data Scientist at the Molecular Tumor Board – Multidisciplinary Commission for Personalized Therapeutic Indication based on a Comprehensive Molecular (Genetic) Assessment. She is a member of the Editorial Board at Springer Nature-BMC Medical Informatics and Decision Making, at the Journal of Medical Artificial Intelligence, and at the International Journals of Computers in Healthcare.

Her main research interests include Artificial Intelligence applied in the Healthcare system and Statistics. She is the author of the two monographs “Artificial Intelligence in Cancer: diagnostic to tailored treatment”, Elsevier, 2020, and “Intelligent Decision Support Systems – A journey to Smarter Healthcare”, Springer 2020.

She is an enthusiastic partisan of the multidisciplinary approach in scientific studies, and all her research is driven by this reason. This has been recognized at multiple levels, from the wide variety of nature of the journals she has published into to the variety of journals and conferences that she reviews for.