Editorial

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It is pasionating to observe how data mining is spreading in applications, making it probably the most important branch of computer science in the near future, accompanied eventually by machine learning. This issue of the journal includes two illustrative studies of this fact: one application to wine classification, contributing to what the authors call Wineinformtics, and another application to predict scoliotic spine curvatures in order to reduce the number of X-rays in medical diagnosis to plan surgery.

It can be said that this issue of the journal is concerned with wellbeing. In a proactive way (drinking good wines), and in a reactive way (lowering the risks of medical diagnosis).

Wineinformtics is a quite new term in literature. It turns around the Computational Wine Wheel, the collection of sensorial features used by wine judges. The authors of the paper propose white box classification algorithms to relate the scores attributed by judges to the sensory data existing in accessible databases of specialized journals. Several machine learning techniques are used in a database with more than 1000 wines. The objective of the authors is to measure the consistency and understanding of wine judges. Good results are obtained with these white box classifiers (especially Naïve Bayes), introducing novelty in classification algorithms in this interesting application.

With medical diagnosis increasingly based on different types of exams and analysis, it may be advantageous to develop techniques lowering the risks for health from the exams themselves, as is specially the case of X-rays. The reported work uses a sequence of the spine movement from the erect to the bending positions. The authors identify mathematical relationships between the spine curvatures, using a kinematic model of the scoliotic spine. Applying the Hough transform (a technique from image processing and computer vision) to analyze the motion through successive images, the authors show that the X-Ray of the erect spine is sufficient to estimate the key parameters for planning the surgery, thus reducing the number of X-rays with respect to actual standard care for similar situations.

The readers will find here interesting ideas.

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