Attribution markers and data mining in art authentication

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Streszczenie

Today’s global art market is a billion-dollar business, attracting not only investors but also forgers. The high number of forged works requires reliable authentication procedures to mitigate the risk of investments. However, with the developments in the methodology, continuous time pressure and the threat of litigation, authenticating artwork is becoming increasingly complex. In this paper, we examined whether the decision process involved in the authenticity examination may be supported by machine learning algorithms. The idea is motivated by existing clinical decision support systems. We used a set of 55 artworks (including 12 forged ones) with determined attribution markers to train a decision tree model. From our preliminary results, it follows that it is a very promising technique able to support art experts. Decision trees are able to summarize the existing knowledge about all investigations and may also be used as a classifier for new paintings with known markers. However, larger datasets with artworks of known provenance are needed to build robust classification models. The method can also utilize the most important markers and, consequently, reduce the costs of investigations.

Słowa kluczowe

authentications, paintings, data mining, analytical procedures, forensic analysis

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