

Automated analysis of hatching lines in drawings for attribution and authentication using convolutional neural networks

Shahrzad Ziaee
Dept. of Computer Science

5/9/2019 at 02:30 pm
CoRE A (301)

Abstract

Authentication and attribution are crucial tasks in the domain of art. While technical analysis can provide insights about the physical properties of the work, complementary connoisseurship methodology for stylistic analysis remains a task that mainly performed by human experts. We explore an automated methodology for analysis of hatching areas in drawings. We hypothesize that hatchings of individual artists carry distinctive attributes that could be utilized in various scenarios of authentication/attribution. To test this hypothesis, we developed computational deep convolutional neural network models for detection of hatching lines and quantifying their properties. We use these models to perform experiments on classification of drawings by artist/school to test this hypothesis.

Examination Committee: Prof. Ahmed Elgammal (Chair), Prof. Alex Borgida, Prof. Casimir Kulikowski,
Prof. Uli Kremer