

NMF-BASED DATA AUGMENTATION FOR GLYPH IMAGES

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The identification and evaluation of inscribed symbols is a challenging problem in archeology and epigraphic studies. In this context, computer vision techniques based on machine learning and data-driven approaches can offer valid solutions to support the work of archeologists. In order to exploit the potential of machine learning strategies based on matrix decomposition for the task of glyphs clustering and classification, huge volumes of data are needed. To this aim, in this work we investigate the application of affine transformations on non-negative factorizations (see e.g. [1]) of the image to provide simultaneously a new image and its factorization, in a data augmentation fashion (see e.g. [2]).

References

- [1] Z. Y. Zhang, *Nonnegative matrix factorization: models, algorithms and applications*, Data Mining: Foundations and Intelligent Paradigms: Volume 2: Statistical, Bayesian, Time Series and other Theoretical Aspects, (2012), pp. 99–134.
- [2] C. Shorten, T. M. Khoshgoftaar, *A survey on image data augmentation for deep learning*, Journal of Big Data, 6(60) (2019), pp. 1–48.