

GENERATION OF AUTOMATIC STIPPLING ILLUSTRATIONS FROM PHOTOGRAPHS FOR DOCUMENTING ARCHAEOLOGICAL PIECES

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ABSTRACT

Hand-made stippling has been used frequently in the process of drawing illustrations for document archaeological pieces. This is due to the fact that this technique represents in an efficient way shapes, tones, and textures, by means of distributing dots on the paper. The process of stippling has needed traditionally the ability of an artist, who usually produces the illustration from photographs. In this paper, a software that generates stippling illustrations of high quality is presented. The developed interface makes possible that any user can generate illustrations without the need of artistic abilities. The program is able to generate dots with a realistic appearance and to distribute them preventing regular patterns. This method is based on statistical algorithms, it works in real-time, allowing the user interacts with the program. We have developed several artistic techniques in high level tasks that allows to improve the final results*.



Figure 1: Results of the algorithms applied on several pottery.

*All the photograph of this paper have been provided by *Wessex Archaeology* under a *Creative Commons* license



Figure 2: Our application executed in a laptop with a digital tablet (images on the left); the user can paint over a mask, which is presented in the image on the top-right corner. In this image, the mask indicates where to stipple and how to stipple, as shown in the bottom-right image.

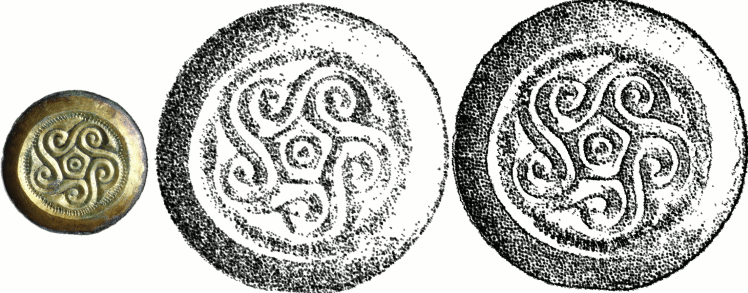


Figure 3: Two different results of a Saxon brooch using our software from the same photograph. The illustration on the middle has been generated by default. The borders have been enhanced in the illustration on the right.



Figure 4: Different kind of pieces that show the results of our method.