

# Digital restoration of a marble head of Julius Caesar from Noviomagus (Nijmegen)

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**Abstract:** A marble head, today at the National Museum of Antiquities (Rijksmuseum van Oudheden) in Leiden, was probably found in the fort of Hunerberg in Noviomagus, the Roman Nijmegen. This marble head, which is considered as a portraiture of Julius Caesar, is heavily damaged. Here we propose a digital restoration of the face of this head. For the restoration we use the face of the Tusculum bust, today in Turin, which is considered the oldest existing portraiture of Caesar.

**Keywords:** Face recognition, 3D rendering, History of art, Caesar's portraitures, Tusculum bust.

Written in Turin, 27 June 2018. DOI: 10.5281/zenodo.1299230

On 22 June 2018, an article published by the National Museum of Antiquities (Rijksmuseum van Oudheden) of Leiden [1], disclosed a 3D reconstruction of Julius Caesar's head based on a marble bust of the museum. Of the result of this reconstruction and of its consequences, we discussed in [2-5]; therefore, let us just tell the following. The reconstruction was made by Maja d'Hollosy. As told by [6], d'Hollosy used a head of Caesar from the National Museum of Antiquities of Leiden and the Tusculum bust from Turin [7,8]. "D'Hollosy took 3D scans of both busts and combined the details into the Leiden 3D scan. She then removed the top layer of the bust and used clay and silicone to achieve a more lifelike appearance". In [4,5], we compared the two busts and the reconstruction, giving some measurements. Actually, the d'Hollosy reconstruction is not the average of the two marble busts.

The Rijksmuseum van Oudheden of Leiden possesses two marble busts which can be considered as portraitures of Julius Caesar (Figure 1). We discussed one of them in [3] (that on the right of the Figure 1). Here we consider the bust that had been used by d'Hollosy, and make on it a digital reconstruction using the face of Tusculum bust (Figure 1, on the left).



Figure 1: The two Caesar's heads in Leiden, as we can see in [9] (Courtesy: National Museum of Antiquities, Leiden). Let me stress that these images are here used only for scientific and cultural purposes

In [9], the Museum tells that one of the marble heads is in bad conditions (that on the left). A part of

the forehead, the chin and the nose are largely smashed away. The head came probably from Hunerberg in Nijmegen. Between 71 and 104 AD, Hunerberg in Noviomagus, the Roman Nijmegen, was a castrum of Legio X founded in origin by Caesar.



Figure 2: Using Paint, let us try to add nose and lips to the Leiden head.

So, let us consider the head in the Figure 1, on the left, and restore it digitally using the Tusculum head. First, let us adjust it with Paint to add nose and lips. The result is given in the Figure 2. After, let us consider the Tusculum and the Leiden heads and make some measurements to see if the Tusculum face could fit into the Leiden head. Let us use two rectangles (red and purple as in the Figure 3).

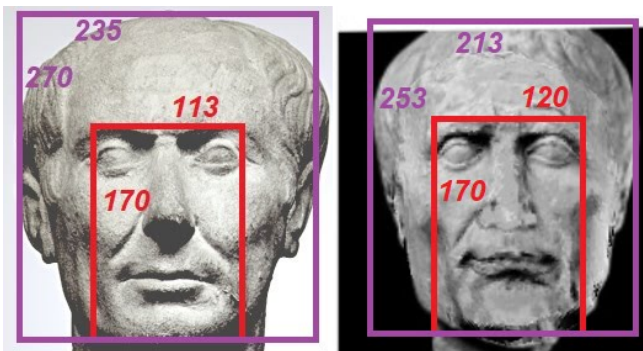


Figure 3: Rectangles of the Tusculum bust (left) and of the Leiden head. Let me stress that the images are here used for scientific and cultural purposes. The sizes are in pixels.



Figure 4: Digital restoration of the face of the Leiden bust

The red rectangles tell us that we can properly fit the Tusculum face into the Leiden head. The result, obtained by means of GIMP, the GNU image processing software, is given in the Figure 4. The result is quite interesting because it is telling us that the two heads are congruent in some manner.

For the discussion of other portraitures of Julius Caesar see please [10-19]. The Figure 5 is showing four of them.

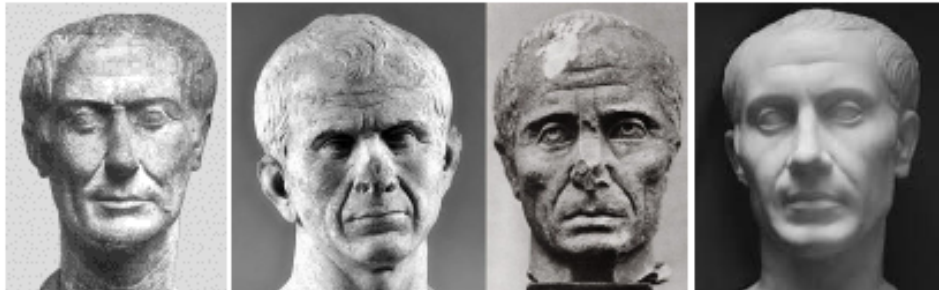


Figure 5: Heads of Caesar. From the left: Tusculum, Arles, the head from a private collection and proposed by F. Johansen as a replica of the Arles bust., and Pantelleria.

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