

## The Ornamental Logic of the Rococo - Visual Computing Methods for Digital Analysis of Ornamental Structures

PhD position in visual computing  
with the Computer Graphics and Virtual Reality Lab  
at the University of Bremen, Germany,  
Salary is according to the German Federal pay scale, TV-L 13, full-time (100%).

### Project Description:

The overall goal of this interdisciplinary project is to research and develop novel methods for extracting information from scanned artworks and visualizing them such that art historians can gain further insights into those artworks and art forms.

The particular context will be ornamental artworks of the 18th century, the so-called *rocaille*, which provide a very rich set of shapes, structures, and, thus, challenging problems in computer science, especially machine learning. In this project, we will focus on etchings, which have already been scanned in high resolution.

The successful candidate will be closely working with art historians to define the appropriate representations, structures, and similarity measures to be extracted from the scanned artworks. Also, one important output of the project is to be a set of software tools that art historians can use later on in their work. These should allow them to classify rocaille ornaments, establish chains of evolutions of designs, distinguish between different authors, determine similarities among different artworks, etc.

Methods that will be needed for these tasks include machine learning, computer vision, graph algorithms, geometric computing, and good programming skills.

### About us:

The position offers great opportunities for collaboration with other members of both the computer graphics lab as well as the other project partners. This job provides a vibrant research environment where a broad range of activities related to visual computing and virtual reality are being pursued. The successful candidate will be working with a dynamic, friendly, and helpful team of computer graphics researchers. Our university is a mid-sized university with about 20,000 students, a lot of them from abroad, offering a broad range of fringe benefits such as sports facilities, cultural activities, and daycare.

### Qualifications:

Candidates should have an excellent Master's degree or equivalent in computer science, or physics, mathematics, computational engineering, etc. Required skills are solid experience in programming and software development, and a very good command of English (reading/writing/speaking). Ideally, you have some knowledge of machine learning and computer vision, you are capable of effectively applying mathematical methods, and you have some knowledge of mathematical curves, graphs, textures. In addition, the successful candidate will be highly self-motivated, passionate about their work, and have good ability to work both independently as well as in a team in a multidisciplinary environment.

### Conditions of employment:

As the University of Bremen intends to increase the proportion of female employees in science, women are particularly encouraged to apply. In case of equal personal aptitudes and qualification, disabled persons will be given priority.

### How to Apply & What to Do in Case of Questions:

Applications should comprise a cover letter, complete CV including any achievements, degree certificates (including list of courses and grades), names and contact details of at least two referees, and other credentials if any (e.g., recommendation letters, publications, etc.). Application by email is preferred. We encourage candidates to apply immediately, but we will continue to review applications until the position is filled. If you have any questions about the position, please do not hesitate to address them to the above email address.

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