

Project Team INRIA:**IPARLA (INRIA Bordeaux Sud-ouest)****Author of the proposal:**

Pascal Barla (pascal.barla@inria.fr)

Title of the proposal:**Appearance modeling for 3D shading and 2D vector drawing****Scientific context**

The way objects appear to us is the result of a complex interplay between geometry, material characteristics and environment lighting. Recent research in Perception strongly suggests that the human visual system only makes use of a small, clever set of visual cues for understanding real-world objects, and does not go through the hassle of trying to "invert the image-creation process". This becomes particularly evident when one observes various artwork that depart from photo-realistic reproductions of people and objects: indeed, artists learn to manipulate the right cues that allow them to convey intended object properties in their stylized images.

Goal

Computer Graphics applications usually provide artists/users with a direct control at the geometry, material and lighting levels. In many cases though, a better knowledge of the relevant cues for conveying specific visual messages would be more appropriate. The goal of this PostDoc is thus to study such cues and provide an explicit model of object appearance. Two domains of application are envisioned: 3D shading and 2D vector drawing. In the first case, an explicit model of appearance would provide more intuitive editing of shaded 3D objects, and would even allow artists to experiment with complex non-photorealistic rendering techniques. In the second case, the appearance model could be directly used to create 2D artwork that give the illusion of shape, material and lighting, without actually having to go through the burden of setting up an entire 3D scene.

Duration

Up to 18 months