“Mitsuba is a research-oriented rendering system in the style of PBRT, from which it derives much inspiration. While navigating, a rough preview is shown that becomes increasingly accurate as soon as all movements are stopped. Once a viewpoint has been chosen, a wide range of rendering techniques can be used to generate images, and their parameters can be tuned from within the program.”

Our goal was to learn the coding of objects in order to create 3D figures within the physically based renderer of Mitsuba. We first started learning how to code through the Mitsuba tutorial on the website of: https://mynameismjp.wordpress.com/2015/04/04/mitsuba-quick-start-guide/ which helps beginners to understand the basics of coding and the Mitsuba renderer. We then started developing our skills further by making the objects certain colors, materials or textures.

“In comparison to other open source renderers, Mitsuba places a strong emphasis on experimental rendering techniques, such as path-based formulations of Metropolis Light Transport and volumetric modeling approaches. Thus, it may be of genuine interest to those who would like to experiment with such techniques that haven’t yet found their way into mainstream renderers, and it also provides a solid foundation for research in this domain.”

Mitsuba and many other physically based rendering software’s, are all commonly used in the process of making visual effects, whether it be for movies or games. This can be due to their ability to render images and models in different environments and atmospheres with vivid details. The use of XML coding within this software allows for a large scope of manipulation and it is very accessible to many people due to it’s simple code design.

The picture below is an example of how physical renderers, like Mitsuba, can be used to test light reflections and shading in certain environments, which is extremely helpful in special effects. Many of these rendering software's can be used alongside a 3D modeling application called Blender, as it allows for a larger variety of objects with greater detail than the presets given in Mitsuba.

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