VICOT: VIRTUAL COLLABORATION TOOL
TO RENDER IMAGES ON THE WEB

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Abstract. *It is clear that visualization helps to present the information in an interactive and easy way for any kind of users. Particularly, a huge growing has been noticed in Medicine where images represent a keystone in diagnosis. There are several systems to visualize medical data to improve the daily practice: exposing cases, presenting charts, teaching to medical community, and others. However, in the majority of cases, these systems are expensive or required a platform installed in the medical health care center. Also, in presence of 3D data, it requires a high-end device to manipulate and control them. In this paper, we present Vicot, a remarkable web tool to render 2D/3D images in a collaborative environment using a simple network configuration. The main goal is to render medical images and volumes, allowing users the easy and transparent manipulation of data using a non presential communication between them. Vicot is developed under a model-view-control architecture acquiring data from a DICOM repository using a friendly web interface. Images are displayed in high-quality, and volumes are displayed using the GPU Ray Tracing algorithm. Output is shown in a HTML5-based web browser using any standard low-end device. Our proposal is ideal to be used as support to teach and discussion of medical cases. Tests performed on each stage of Vicot allow obtaining the suitable limits to maximize its performance. Also, using a web interface to input/output allows the independence of operating system, spreading its scope to different devices such as PC, tablets, smart phones.*

Key words: Visualization, Volume Rendering, Ray Tracing, Volume

1   INTRODUCTION

Nowadays, Medicine has been influenced by software programs to improve the day-to-day clinical practice. Aided diagnoses, analysis of diseases, preoperative planning, assisted surgical, and