3D Characters for Virtual Reality

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Abstract

Creating a 3D avatar that looks like a specific person is time-consuming, requires expert artists, expensive equipment and a complex pipeline. In this tutorial we explain the different stages of a traditional character animation pipeline: modeling, rigging and animation. But, most important we describe how each of this stages bind together and which are the challenges developers face today at each stage. Our ultimate goal is to explain step-by-step the creation of a unified facial animation pipeline. We build the tutorial over our experience on what worked, what didn't work, why we did what we did and how we are planning to improve in the future. Given the popularity of Virtual Reality since the launching of Oculus Rift, we also describe how a traditional animation pipeline can be applied in Virtual Reality, it's challenges, limitations and potential. Throughout the tutorial we introduce the theoretical background for character animation and present the current state of the art in this field. Last, we aim to trigger a discussion to analyse different lines of research that emerge by bringing together traditional character animation and Virtual Reality.