

# Real Time Sumi-E Style Rendering Techniques

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University of Dublin, Trinity College, 2020

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Computer generated imagery (CGI) is commonplace in media such as video games and cinema, both areas that are at the forefront of developments in the field of computer graphics. Advancements in the field have had for the most part focused on trying to achieve realism. However, there are situations in which realism is not desirable as information can be abstracted and conveyed in a different yet more efficient manner, leading to the need for non-photorealistic rendering (NPR).

A style of NPR which has not had as much widespread adoption beyond the PlayStation 2 video game *Ōkami* is that of sumi-e or ink wash rendering; referring to a set of brush painting techniques used in East Asian countries, particularly Japan, China and Korea. Sumi-e makes use of black ink in a white paper canvas to create simple drawings via single, well defined strokes. Sumi-e rendering techniques, like other areas of NPR focus on edge extraction and drawing of strokes and edges, drawing of textures and interior shading but have a different approach so that the desired art style can be achieved.

The goal of this project is to research and implement previously established techniques used for sumi-e style rendering and develop a sumi-e rendering pipeline. The rendering pipeline will be applied to various 3D models and will be used to verify whether sumi-e rendering is suitable for media such as video games.