

# Editorial Preface

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*A meaningful experience is defined as that in which the subject classifies as important, relevant and rewarding its contributions, and these may be of various kinds (aesthetic-contemplative, educational, playful, entertaining, historical, social, etc.). (Fernandes-Marcos, 2017, p.133)*

The articles compiled in this issue reflect innovative developments in the field of creative interface, computer graphics and computer arts, embracing also post-digital approaches wherein the digital medium becomes subservient to the physical material.

## PAPERS IN THIS ISSUE

In *Efficient Hair Rendering with a GPU Cone Tracing Approach*, Joge Martins and co-authors propose an approach to improve the rendering of hair in view of computer graphics applications. To improve the rendering performance, they present two main contributions: a cone based solution and a hybrid bounding volume hierarchy solution. With the cone based solution they can produce aliasing free images with just a super-sampling of 2x2 and produce images of comparable quality to the ones produced with a stochastic ray tracer with a 16x16 super-sampling rate while requiring a much lower rate and achieving speedups of up to 4. With the hybrid bounding volume hierarchy, which uses both axis aligned and oriented bounding boxes, it is achieved an average intersection test reduction of 53%, while only increasing the memory footprint by 11%.

Ricardo Alves and co-authors in *Interactive 360 Degree Holographic Installation* present an interactive holographic installation that has been developed, making use of a holographic technique in order to call the attention of potential clients, by working as a host or showing a product advertising within a company. The installation consists in 360 degrees (8 views) holographic avatar or object(s) and, optionally also a screen, where a set of menus with videos, images and textual contents are presented. It uses several Microsoft Kinect sensors for enabling user (and other persons) tracking and natural interaction around the installation, through gestures and speech while building several statistics of the visualized content. All those statistics can be analysed on-the-fly by the company to understand the success of the event.

In *Arbor - Interactive Sculpture: From the Tree of Letters to the Tree of Words*, Ana Cristina Marques and co-authors propose an interactive sculpture in conceptual and operational terms while analysing the relation developed with users, peering into the technology and the interfaces installed, checking the elapsed interventions and anticipating possible exploits. The sculpture *Arbor* allows recreational and pedagogical approaches embracing several new dimensions for interaction exceeding the applicability initially imagined by its authors.

Most of the known video games developed by big software companies usually establish an approach to the cinematic language envisaging the creation of a perfect combination of narrative, visual technique and interaction. Unlike most video games, interactive film narratives normally involve an interruption in time whenever the spectator should make choices. In *Dialectical Polyptych: An interactive movie installation* Rui António and co-authors propose an interactive movie environment aiming at giving the spectator the control over film editing, thus exploiting the role of the spectator as an active subject in the presented narrative.

The articles that make up this issue serve as a summary of diverse creative work going on at the forefront of digital technologies in both art and science.

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## REFERENCES

Fernandes-Marcos, A. (2017), “Computer artefact: the crucial element in artistic practice in digital art and culture”, *Revista Lusófona de Estudos Culturais*, vol. 3, n. 2, 2017, pp. 149 – 166 (ISSN: 2183-0886).