Introduction to Special Issue SAP 2018

1 INTRODUCTION

This special issue of ACM Transactions on Applied Perception (TAP) showcases four articles from the 15th Symposium on Applied Perception (SAP), held in Vancouver, Canada, in August 2018 and colocated with SIGGRAPH. ACM SAP aims to advance and promote research that crosses the boundaries between perception and disciplines such as graphics, visualization, computer vision, haptics, and acoustics. The scope of the conference includes experimental studies, applications, and algorithms in any area of research that incorporates elements of perception and computer science.

We were delighted to see a wide range of high-quality submissions that included research on virtual characters, self-avatars, haptic perception, speech perception, and locomotion interfaces. We had 53 papers submitted for the SAP conference, of which 24 were accepted. The four articles that are included in this special issue were judged to be the strongest submissions and underwent additional review in order to be included here.

The first article, “[Perceptual Adjustment of Eyeball Rotation and Pupil Jitter for Virtual Characters](#)” by Sophie Jörg, Andrew T. Duchowski, Krzysztof Krejtz, and Anna Niedzielska, examines the influence of subtle eye movements on the perceived naturalness of virtual characters with differing levels of realism. The authors investigated the perceived naturalness of fine eye motions on three virtual characters.

In the second article, “[Analysis of Hair Shine Using Rendering and Subjective Evaluation](#),” authors Girish Ramesh, Martin Turner, Björn Schröder, and Franz Wortmann present a series of experiments to evaluate four different physically based hair shading models. The results of these studies show how the degree of randomness in hair color and orientation influence the perception of realism, shine, naturalness, and health.

In the third article, “[Foveated Depth-of-Field Filtering in Head-mounted Displays](#),” authors Martin Weier, Thorsten Roth, Andre Hinkenjann, and Philipp Slusallek present a foveated rendering system integrated with a gaze-contingent depth-of-field filter for head-mounted displays to conceal rendering artifacts and accelerate rendering. A perceptual study indicated that perceived rendering quality was indeed rated almost as high for the foveated depth-of-field mode compared to full rendering.

The fourth article, “[Comparison of Unobtrusive Visual Guidance Methods in an Immersive Dome Environment](#)” by Steve Grogorkick, Georgia Albuquerque, Jan-Philipp Tauscher, and Marcus Magnor, compared five different techniques to unobtrusively guide users’ attention in wide field-of-view immersive environments, applicable to panoramic projection or future HMD setups. Four of the techniques showed promising visual guidance performance while keeping distractions low.

To conclude, we thank the reviewers who provided insightful and timely evaluations of the work presented in this special issue of TAP. The ACM Transactions on Applied Perception editors-in-chief, Victoria Interrante and Martin Giese, were also integral in the successful and timely publication of this issue. The ACM publications staff should also be thanked for their efforts. This special issue would not exist without the hard work that each of these individuals contributed.

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We hope you enjoy these articles and encourage you to look at the SAP 2018 proceedings on the ACM Digital Library.

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Guest Editors