Oral Presentation

[VHF3/DES3]Virtual Reality

Special Topics of Interest on AR/VR and Hyper Reality
Chair: Takashi Shibata (Tokyo Univ. of Social Welfare)
Co-Chair: Johan Bergquist (Consultant)
Wed. Nov 27, 2019 5:00 PM - 6:30 PM Mid-sized Hall A (1F)

5:00 PM - 5:25 PM

[VHF3/DES3-1(Invited)]VR headset with human-eye resolution

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Keywords:Virtual reality, Resolution, ppi, ppd, VR-1

With current display manufacturing methods, it would be very hard to produce a single near eye display that offers 60 pixels / degree resolution over the whole field of view and is small enough to fit into the headset. In case of greater than 90-degree field of view, basically 6k x 6k panel would be required. With the high refresh rates of virtual reality applications, this would mean also very large data transfer rates and high rendering load on GPU´ s.

Varjo overcome these challenges by composing the single eye image from two different display sources, while minimizing the effect on total rendering load. High angular resolution is used on the area where it is mostly needed. Precise analysis of displays with geometrical- and optical adjustments is needed to blend the 2 separate images to a one uniform scene.