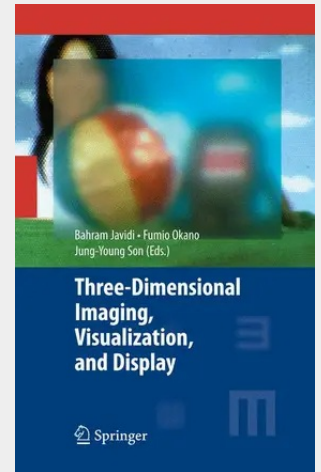


Three-Dimensional Imaging, Visualization, and Display

The history of visual media is characterized by drawing, painting, photo, stereoscope, TV and displays, Holography, and HDTV. Three-dimensional (3-D) imaging, visualization, and display technology is the next phase in this historical development. There is no doubt that 3-D TV and 3-D display are the visual media that will succeed HDTV in the near future. The evolutionary merging of communication and broadcast technologies will be enhanced by 3-D visualization, including multimedia communication centers which can respond to all the services and functions provided by the future communication systems. Comparison of a scene presented by 2-D and 3-D images reveals that the 3-D image provides much more pleasing and realistic information than its 2-D version. The benefits provided by 3-D images result from the depth information they preserve. Depth gives viewers the feeling of being in the place where the 3-D image is captured (i.e., immersive feeling) and the feeling of being present (presence feeling). Depth increases efficiencies in remote site operations, such as remote medical and tele-operations, by making viewers perceive the scene as more real from within their living environments. The accuracy and the presence feeling are the main motives of demands for 3-D images in the areas of communication, broadcasting, entertainment, medical operations, virtual world presentations, advertisement, training, education (education + entertainment), telemarketing, tele-presence, tele-conference, visualization of experimental results, and so on.

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106,99 €
99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780387793344
Medium: Buch
ISBN: 978-0-387-79334-4
Verlag: Humana
Erscheinungstermin: 12.12.2008
Sprache(n): Englisch
Auflage: 2009
Produktform: Gebunden
Gewicht: 986 g
Seiten: 531
Format (B x H): 160 x 241 mm

