

## Stereoscopic 3D Technology and Virtual Reality

Susumu Tachi

Professor Emeritus, The University of Tokyo & Professor, Keio University

The recent presentation of stereoscopic 3D films and the subsequent development of various 3D technologies such as 3D televisions and computers constitute the third wave of public interest in stereoscopic 3D imaging. The first and second waves were, of course, those that were respectively witnessed in the 1950s (so called "3-D movie craze") and in the 1980s with the advent of 3D films using linear polarization and a resurgence of the same driven by circular polarization technology. Interestingly, the concept of virtual reality (VR) first gained ground in the 1960s, following which it really gained prominence, what I consider to be the first wave of public interest, in the 1990s. Clearly, VR attracted increased interest roughly 10 years after the corresponding interest in 3D imaging in both cases.

In light of this trend, I expect that we will once again witness interest in VR in another ten years. This is understandable, because when we observe 3D stereoscopic images, a natural extension would be for these images to be interactive, that is, we would like to manipulate these 3D images in real time. The aim of VR, of course, has always been to realize a real-time, interactive, life-sized 3D immersive environment.

In this keynote, I overview recent developments in 3D as well as VR technology from the viewpoint of what I expect will be the second wave of interest in VR, and I outline some future perspectives.