ICSMARTGRID 2026

14TH INTERNATIONAL CONFERENCE ON SMARTGRID

Professor Radu-Daniel Vatavu

Stefan cel Mare University of Suceava, Romainia

Abstract

Title: Realizing Ubiquitous Computing and Augmented Reality through Sustainable Smart Grids

For many decades, visions of ubiquitous computing and augmented reality have imagined worlds in which computation is deeply embedded into physical environments and digital information becomes readily available as an integral part of everyday experience. The realization of these visions depends on the development of reliable, interoperable, and economically sustainable energy infrastructures. Today, the convergence of smart grid and computing is evident in digital twins, pervasive sensing, and cloud and edge-based systems that enable novel physical-digital interactions in everyday life. As we move closer to realizing these visions, from research laboratories to buildings, cities, and world scale, their success becomes inherently linked to the capabilities of next-generation smart grids. In this talk, I will present human and computational requirements for emerging applications in smart buildings, enhanced perception and cognition, and immersive collaboration. I will invite the audience to reflect on how future physical-digital systems can be designed around efficient, resilient, and sustainable net-zero energy management.