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ABSTRACT

This paper reviews the research and development of augmented reality (AR) applications in design and manufacturing. It consists of seven main sections. The first section introduces the background of manufacturing simulation applications and the initial AR developments. The second section describes the current hardware and software tools associated with AR. The third section reports on the various studies of design and manufacturing activities, such as AR collaborative design, robot path planning, plant layout, maintenance, CNC simulation, and assembly using AR tools and techniques. The fourth section outlines the technology challenges in AR. Section 5 looks at some of the industrial applications. Section 6 addresses the human factors and interactions in AR systems. Section 7 looks into some future trends and developments, followed by conclusion in the last section.