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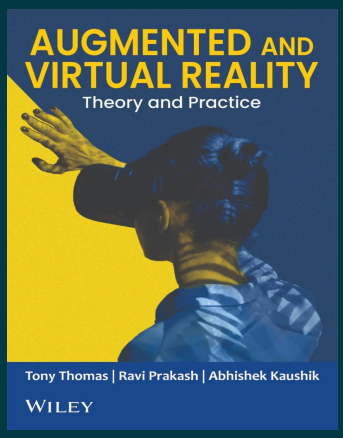

Augmented and Virtual Reality: Theory and Practice

By Tony Thomas, Ravi Prakash, Abhishek Kaushik

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Description

"Augmented and Virtual Reality: Theory and Practice" provides a structured, in-depth exploration of immersive technologies—Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR), and Extended Reality (XR)—bridging foundational theory with hands-on application. The book begins by introducing the fundamentals of immersive computing, including the distinction between real and virtual environments, levels of immersion, coordinate systems, and the sensory dimensions of user experience. It explores the evolution of virtual reality and its three foundational pillars—immersion, interaction, and imagination—while outlining significant milestones, challenges, and technological breakthroughs. Readers gain insights into the technical building blocks, such as rendering methods, motion tracking, depth sensing, simultaneous localization and mapping (SLAM), and gesture-based interaction techniques.

About the Author

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Dr. Tony Thomas serves as an Associate Professor in the School of Computer Science and Engineering and as the Associate Dean (academic) at the Kerala University of Digital Sciences, Innovation and Technology (Digital University Kerala), India.

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