1. Record Nr. UNINA9910745586303321 Autore Ivanov Vitalii Titolo Augmented Reality for Engineering Graphics / / by Vitalii Ivanov, Ivan Pavlenko, Artem Evtuhov, Justyna Trojanowska Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2024 Pubbl/distr/stampa **ISBN** 3-031-44641-0 Edizione [1st ed. 2024.] Descrizione fisica 1 online resource (XIII, 89 p. 78 illus., 57 illus. in color.) Collana Springer Tracts in Mechanical Engineering, , 2195-9870 Disciplina 620.0042 Soggetti Engineering design Virtual reality Augmented reality Industrial engineering Production engineering **Engineering Design** Virtual and Augmented Reality Industrial and Production Engineering Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Major challenges in engineering education -- Product design --Visualization of engineering products -- Software description of the AR mobile application -- Exercises. Sommario/riassunto This open access book offers a timely snapshot of Augmented Reality (AR) technology, with an emphasis on its application within the mechanical and manufacturing engineering domains, for both educational and industrial purposes. Reporting on the experience of the authors, the book introduces readers to the principles of product design, with an emphasis on modern strategies and approaches for user-centered design, creativity, and design for manufacturing and sustainability. It guides to the application augmented reality and visualization techniques in the design process. In turn, it describes an AR mobile application developed by the authors to transform 2D drawings into dynamic 3D objects. The book also includes exercises.

All in all, this book offers a practice-oriented guide to Augmented Reality applications in mechanical engineering and education,

addressing advanced undergraduate students, lecturers, and professionals in the engineering field. This is an open access book.