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| Descrizione fisica      | 1 online resource (163 pages)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Collana                 | Mathematics for Industry, , 2198-3518 ; ; 32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Disciplina              | 006.60151                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Soggetti                | Engineering mathematics<br>Engineering - Data processing<br>Image processing - Digital techniques<br>Computer vision<br>Computer science - Mathematics<br>Computer simulation<br>Mathematical and Computational Engineering Applications<br>Computer Imaging, Vision, Pattern Recognition and Graphics<br>Mathematical Applications in Computer Science<br>Computer Modelling                                                                                                                                                                                                             |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nota di contenuto       | Mathematics in Computer Graphics -- Micro-Appearance Modeling of Fabrics -- Measuring the Light Reflectance with Mobile Devices -- Sparkling Effect in Virtual Reality Device -- Dappled tiling -- Procedural Non Uniform Cellular Noise -- Just Enough Non-Linearity -- An Efficient Cloud Simulation with Adaptive Grid Structure -- Recent Progress in Simulations of 3D Vortex Sheets with Surface Tension -- Physics-Based Computational Design for Digital Fabrication -- Design Tools in the Age of Personal Fabrication -- Clustering and Layout of Graphs with Attributed Nodes. |
| Sommario/riassunto      | This book presents cutting-edge developments in the advanced mathematical theories utilized in computer graphics research – fluid simulation, realistic image synthesis, and texture, visualization and digital fabrication. A spin-off book from the International Symposium                                                                                                                                                                                                                                                                                                             |

on Mathematical Progress in Expressive Image Synthesis in 2016 and 2017 (MEIS2016/2017) held in Fukuoka, Japan, it includes lecture notes and an expert introduction to the latest research presented at the symposium. The book offers an overview of the emerging interdisciplinary themes between computer graphics and driven mathematic theories, such as discrete differential geometry. Further, it highlights open problems in those themes, making it a valuable resource not only for researchers, but also for graduate students interested in computer graphics and mathematics.

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