

1. Record Nr.	UNINA9910830961103321
Autore	Paoluzzi Alberto
Titolo	Geometric programming for computer aided design // Alberto Paoluzzi ; with contributions from Valerio Pascucci [and three others]
Pubbl/distr/stampa	Chichester, West Sussex, England : , : Wiley, , 2003 ©2003
ISBN	1-119-50912-2 9786610554102 0-470-01388-5 1-280-55410-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (945 pages) : illustrations
Disciplina	620.00420285
Soggetti	Geometric programming Computer-aided design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Sommario/riassunto	Geometric Programming is currently of interest in CAD (Computer Aided Design) and related areas such as computer graphics, modeling and animation, scientific simulation and robotics. A growing interest towards gemotric programming is forecast in the next few years with respect to market specific CAD applications (e.g. for architecture and mechanical CAD) and web-based collaborative design environments. PLaSM is a general purpose functional language to compute with geometry which the authors use throughout their text. The PLaSM language output produces VRML (Virtual Reality Modelling Language) files which are used to create virtual worlds. PLaSM blends the powerful algebraic approach to programming developed at IBM research, with a dimension-independent approach to geometric data structures and algorithms, This book shows that such geometric code can be surprisingly compact and easy to write.It begins by introducing the basic programming with PLaSM and algebraic and geometric foundations of shape modeling, the foundations of computer graphics, solid modeling and geometric modeling of manifolds follows and finally

discusses the application of geometric programming. For each topic, the mathematics is given, together with the PLaSM implementation (usually with a few lines of readable code) and some worked examples.* Combines excellent coverage of the theory with well-developed examples* Numerous applications eg. scientific stimulation, robotics, CAD, Virtual Reality* Worked exercises for each topic* Uses PLaSM language (supplied) throughout to illustrate techniques* Supported with web presenceWritten for Industrial Practitioners developing CAD software, mechanical engineers in Graphics, CAD and CAM, undergraduate and postgraduate courses in Computer Science and Mechanical Engineering, as well as programmers involved with developing visualization software.
