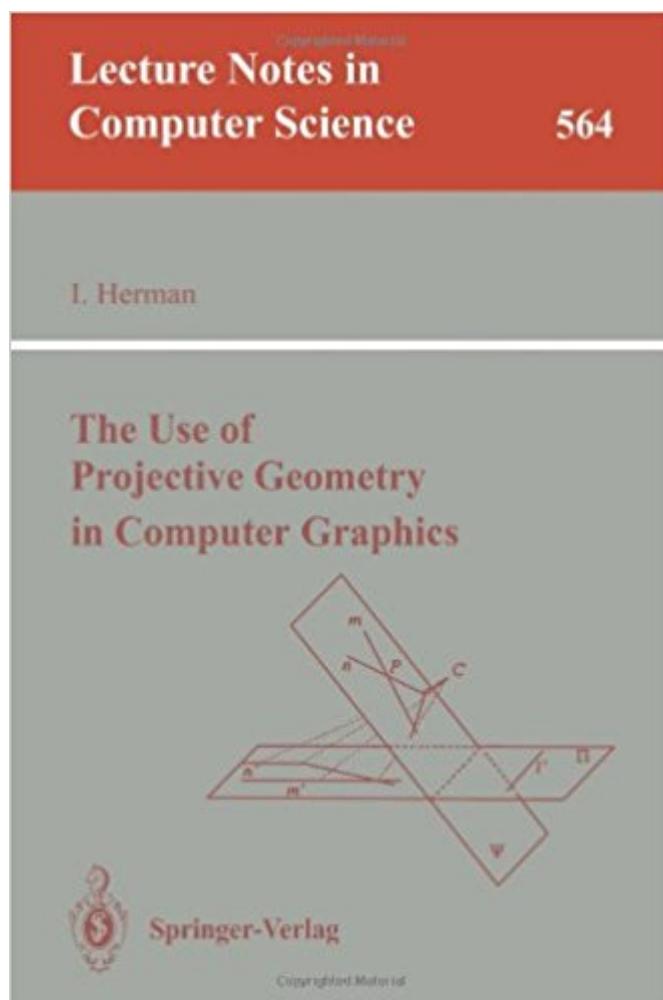


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# The Use Of Projective Geometry In Computer Graphics (Lecture Notes In Computer Science)



## Synopsis

The ultimate goal of all 3D graphics systems is to render 3D objects on a two-dimensional surface such as plotter output or a workstation screen. The approach adopted by most graphics systems is to perform a central or parallel projection of the objects onto the view surface. These systems have to make use of the mathematical results of projective geometry. This monograph has as its aim the derivation of a framework for analyzing the behavior of projective transformations in graphics systems. It is shown that a mathematically precise description of the projective geometrical nature of a graphics system leads not only to a deeper understanding of the system but also to new approaches which result in faster or more precise algorithms. A further aim of the book is to show the importance of advanced mathematics for computer science. Many problems become easier to describe or to solve when the appropriate mathematical tools are used. The author demonstrates that projective geometry has a major role to play in computer graphics.

## Book Information

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Languages. Beyond the Orient: The Research Challenges Ahead: 21st International Conference, ICCPOL 2006, Singapore, ... (Lecture Notes in Computer Science) Algebraic Geometry I: Complex Projective Varieties (Classics in Mathematics) Basic Algebraic Geometry 1: Varieties in Projective Space Modern Geometries: Non-Euclidean, Projective, and Discrete Geometry (2nd Edition) Computer Graphics Through OpenGL: From Theory to Experiments (Chapman & Hall/CRC Computer Graphics, Geometric Modeling, and Animation) Software Engineering for Large-Scale Multi-Agent Systems: Research Issues and Practical Applications (Lecture Notes in Computer Science) Cryptography and Coding: 6th IMA International Conference, Cirencester, UK, December 17-19, 1997, Proceedings (Lecture Notes in Computer Science) Advances in Artificial Intelligence: Theories, Models, and Applications: 6th Hellenic Conference on AI, SETN 2010, Athens, Greece, May 4-7, 2010. Proceedings (Lecture Notes in Computer Science) The Semantic Web - ISWC 2008: 7th International Semantic Web Conference, ISWC 2008, Karlsruhe, Germany, October 26-30, 2008, Proceedings (Lecture Notes in Computer Science) Electronic Government: First International Conference, EGOV 2002, Aix-en-Provence, France, September 2-5, 2002. Proceedings (Lecture Notes in Computer Science) Ada 2012 Reference Manual. Language and Standard Libraries: International Standard ISO/IEC 8652/2012 (E) (Lecture Notes in Computer Science) Ada 2012 Rationale: The Language -- The Standard Libraries (Lecture Notes in Computer Science) Ada 2005 Rationale: The Language, The Standard Libraries (Lecture Notes in Computer Science) Hardware and Software: Verification and Testing: 11th International Haifa Verification Conference, HVC 2015, Haifa, Israel, November 17-19, 2015, Proceedings (Lecture Notes in Computer Science) Beyond the Third Dimension: Geometry, Computer Graphics, and Higher Dimensions (Scientific American Library) The History and Science of the Manhattan Project (Undergraduate Lecture Notes in Physics) HACKING: Beginner's Crash Course - Essential Guide to Practical: Computer Hacking, Hacking for Beginners, & Penetration Testing (Computer Systems, Computer Programming, Computer Science Book 1)

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