

R.I.T

College of Science

Chester F. Carlson

Center for **IMAGING** SCIENCE Seminar Series

3D Film Making

Cary Kornfeld

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Swiss Federal Institute of Technology, Zurich (ETHZ)*



4pm, Wed., Jan. 23, 2008

Auditorium of the Center for Imaging Science

Stereoscopic Films are special. They tickle parts of our brain that are “rarely” stimulated in this way. Making 3D films requires special equipment, tools, knowledge and a different set of film techniques from traditional cinema. At ETH in Zurich Switzerland, students are required to build the equipment they use. Consumer camcorders are modified, software is written, post-production tools are created. Our research explores issues related to binocular visual fatigue to create better 3D systems and content.

Following the talk a free screening of ETHZ student 3D films will take place at the School of Film and Animation. There is no charge for screening tickets, but they are required. Screening tickets are available at SOFA office, 7B-2115 (475-6175).

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Abstract

Stereoscopic Films are special. They tickle parts of our brain “rarely” stimulated in this way. The film biz has fallen in love with 3D films ~ again. Hollywood has converted more than 1,000 screens to be 3D capable with 5,000 to follow within 2 years. 50 years ago the studios produced ~75 3D films. Film patrons staggered from theaters with splitting headaches, suppressing the urge to vomit. Some assert the reasons behind the utter failure of 3D at that time included: blessed ignorance of how to create 3D content; poorly equipped movie theaters; and mis-aligned images by projectionists.

RealD’s 3D technology is promoted on the premise of eliminating film piracy, and they claim that the Real 3D experience cannot be attained in a home cinema setting. Ignored is the question of viewer fatigue. Viewers begin to experience fatigue within 10 minutes; an hour of continuous viewing can be excruciating. The causes of fatigue are not well understood, but fall into two categories: physiological (vergence/ accommodation) and psychological (conflicting visual depth cues).

Our research at ETH focuses on perception as an inspiration for better computer systems. We teach courses on binocular vision that require students to build 3D capture systems that are then used to create 3D films. Our research explores issues related to binocular visual fatigue to create better 3D systems and content.

This presentation will survey the technical and visual aspects of 3D content creation. A selection of films will be shown to demonstrate related concepts.

Speaker Bio

Cary Kornfeld received his BS in Physical Organic Chemistry from UCLA. He spent a number of years studying Marine Geochemistry at the University of Washington. After serving in the Merchant Marines during the Vietnam War he became involved in building classified communications systems for the U.S. government. During that time he returned to graduate school where he received a MS and Ph.D. in Electrical Engineering/Computer Systems from Stanford University. Dr. Kornfeld spent a number of years at Xerox PARC before joining AT&T Bell Laboratories as a Principal Investigator. He was one of the five founding members of the NEC Research Institute in Princeton as a Senior Research Scientist, Acting Director of its Multimedia Group and taught Computer Science courses at Princeton University. In the fall of 1992, Dr. Kornfeld joined Interval Research as a Project Coordinator specializing in Interactive Visual Media. Dr. Kornfeld spent three years at the Stanford School of Medicine before joining the Computer Science faculty at ETH Zurich. Dr Kornfeld has published in the areas of Electric Paper, VLSI Design, Computer Graphics, Neuro and Optical Computers, Stereoscopic Imaging for Telepresence and also in the domain of Color Enhancements for Commercial Printing. He has a number of US Patents in these areas. He also serves as a consultant and expert witness for patent litigation and performs due diligence for Venture Funding.