

Instructor

Dr. Jordan Isailovic, scientist, JRI Technology and California State University, is author of **Videodisc and Optical Memory Technologies** and **Videodisc Systems Theory and Applications**. He has



authored numerous technical articles and holds several patents on digital information storage techniques and video signal processing. He presented the world's first public engineering course on videodisc technology (January 1982) and taught the world's first graduate courses on videodisc and optical memories (CD, CD-ROM, etc.) at UC Irvine and California State University Fullerton. He developed a double density code, the "**Jordan Code**", on which three US patents are held.

His research projects include the following areas: three-dimensional optical memories, channel coding for optical recording, machine vision, image processing, testing methodology for visually-lossless compression, etc. For lectures, he has written four manuscripts: *Optical Compact Systems* (including CDs and CD-ROMs), *Advanced Digital Systems Design, Guide to Frame Grabber Design*, and *Multimedia PC Architecture and Design*.

Some of Dr. Isailovic's projects and accomplishments:

This list is in chronological order, and does not include books, invited papers, or other publications

Designed and developed extended play formats (US patent #4499502)

Developed a digital information storage technique for use with a video signal (US patent #4347619)

Developed a double density code, the "Jordan Code" on which three US patents are held (#4204199, #4232388, #4307381)

Developed an adaptive processor for the luminance/chrominance signals separation in the standard NTSC TV signal; successfully developed two systems

Designed a Multiplex Analog Component (MAC) system for videodisc recording

Introduced the visual model for efficient video signal coding and compression

Prepared a study for OPTIMEM: "Code selection for optical recording"

Prepared and published: "OPTICAL MEMORY REPORT"

Designed machine vision system for rare coin grading

Developed a multimedia board with video, audio, and data in the same format

Designed a color and BW quad video monitor with motion detector

Dr. Isailovic's current research primarily focuses on video compression - a subject closely related to his Ph.D. thesis in which, among other things, he established the theoretical limits for TV signal compression based on 3D predictive coding. As a consultant, he has evaluated a great number of MPEG (-1-2-4) encoders and decoders. For Advanced Interactive Inc. he designed the Non-Peg Interactive TV set-top box. He represented Packard Bell-NEC - where he worked as a Video Architect - in the DVD Copy Protection Technical Working Group (CPTWG), represented Lucas Film and Technicolor in MPEG, and is still active on the MPEG committee, SMPTE and CPTWG. He co-chaired MPEG Digital Cinema AHG and the SMPTE working group on DVD Authoring.

Currently, Dr. Isailovic is consulting in the fields of digital cinema and video compression: evaluating/testing compression techniques, proposing system designs, participating in Standards committees on digital cinema, etc. Also, he serves as an expert witness in patent litigation: he assesses and evaluates patents and patent portfolio.

Dr. Isailovic may be reached at jordan@jrtechnology.com

Projects and accomplishments - continued

Selected the optimal channel code for optical recording of an MPEG-2 data stream (presented at the 136th SMPTE conference in October 1994), and published in the SMPTE Journal

Developed a multimedia PC architecture for the MPEG-2 environment

Designed the Non-PEG system (encoder and decoder - set-top box) for the video, audio, and data delivery in the video format

Feasibility study for the MPEG-2 delivery over a wireless home network

Feasibility study: MPEG-4 in the (Cadence) IC design tools

Designed video converters for the HDTV-to-Standard TV and STV-to-HDTV conversions.

Evaluated codecs for Digital Cinema.

Selected the Stress Test material for the MPEG-4 Cinema Profile feasibility study.

Evaluation and development of the Test methodology for the compression in Digital Cinema.

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