Multimedia Networking Products

By Zeyun Cui(zcui@cis.ohio-state.edu)

Abstract

Multimedia is the combined use of several media, such as movies, slides, music, and lighting, especially for the purpose of education or entertainment. Networked multimedia is to build the multimedia on network and distributed systems, so different users on different machines can share image, sound, video, voice and many other features and to communicate with each under these tools. This paper is a detailed survey of the Multimedia Networking products.

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General Information of Multimedia

- **What is networked multimedia?**

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mul.ti.me.di.a      pl.n.
1. The combined use of several media, such as movies, slides, music,
and lighting, especially for the purpose of education or entertainment.
2. The use of several mass media, such as television, radio, and
print, especially for the purpose of advertising or publicity. Also
called mixed media
net.work  n.
4.a. A group or system of electric components and connecting circuitry
designed to function in a specific manner. b. Computer Science. A
system of computers interconnected by telephone wires or other means
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          in order to share information.
                          -- From The American Heritage Dictionary
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Networked multimedia is to build the multimedia on network and distributed systems, so different users on different machines can share image, sound, video, voice and many other features and to communicate with each under these tools.

- **Why networked multimedia?**

Multimedia combines the interactivity of computer with a natural user interface that includes images, sounds, animation,full-motion video, and voice recognition. During the past decade, multimedia has showed its value as a powerful set of technologies when used to support applications such as training, business presentations, and marketing kiosks. However, since most of these applications were stand-alone (which means, of course, expensive), to attract the mainstream user -- the business user -- they need to be more effective and affordable. Therefore, making move to networked or distributed multimedia becomes an inevitable trend today. With networked multimedia, people can share the multimedia resource and communicate, work collaboratively, so they may produce more effective results and save more time and money.

- **Application Tools for Multimedia**

Supporting multimedia requires application tools. They usually are divided into these categories: authoring tools, graphics tools, animation tools, audio tools and video tools [1]. Application services are also needed, they are common user access services, object management facilities and data conversion services.In this homepage, the products are grouped according to their functions in the networking multimedia application. Some of them may overlap.

- **Technical Challenges**

Networked multimedia face many technical challenges like real-time data over non-realtime network, high data rate over limited network bandwidth, unpredictable availability of network bandwidth. High-bandwidth network protocols such as 100-Mbps Ethernet, FDDI, and ATM are expected to make the networking of digital video and audio practical.The basis of Internet, TCP/IP, provides the range of services needed to support both small and large scale networks.

- **Some On-Line Sites of Networked Multimedia**

On public Internet, the best-known example of distributed multimedia is MBONE, which stands for the Virtual Internet Backbone for Multicast IP. CU-SeeMe, Internet Talk Radio and INETphone servers, are some of the applications. Some other audio-visual application such as radio products can be found at Canadian Broadcasting Corp's Radio, CBC Radio: An Audio-visual application on Internet , and Products by RealAudio. For more general information about multimedia, please check out Index to Multimedia Information Sources and Yahoo Multimedia Homepage.

- **The Sources of This Homepage**

The field of networking multimedia is growing very quickly. And many products are produced across various systems on the network. This homepage lists some of the products. Although they cannot cover all the networked multimedia products, but we can get at least some, if not many, information about them. The products listed in this homepage includes the listed products in A Survey of Distributed Multimedia Research, Standards and Products [2]. Descrptions of these products are linked to there. Other products can be found in Computer Select CD-ROM (1995) [3].

The Multimedia Networking Products

Product--[type]--(Relative Standards)

Note the items with the * are linked to the item in <u>Survey's Products</u>
http://cuiwww.unige.ch:80/OSG/info/MultimediaInfo/mmsurvey/products.html

- **Video Conferencing Tool**

  - *BVCS--[Video Conferencing System]--(NetBIOS LAN,MPEG,JPEG)
  - *CameoPVS--[Video Conferencing VideoPhone]--(ISDN)
  - CU-SeeMe--[Video Conferencing Software]--(IP)
  - *DECspin--[Desktop teleconferencing]--(TCP/IP,DECnet,JPEG,G.711)
  - *Desktop Videoconferencing--[Video Conferencing]--(ISDN)
  - *ES.F2F--[Desktop Video Conferencing]--(Appletalk, ISDN)
  - *ivs--[Audio/Video Conferencing Tool]--(H.261, IP Multicast)
  - *MacMICA--[Conferencing System]--(Appletalk)
  - *mmcc--[Video Conferencing]--(DSI)
  - *nv--[Video Conferencing]--(IP Multicast)
  - Person to Person/2--[Bilateral Video Conferencing]--(ISDN,TokenRing,Ethernet LAN)
  - PICFON System--[Video Telephone System]--(PICFON)
  - PSVC--[Video Conferencing Software]--(TCP/IP)
  - ShareVision Mac3000--[Desktop Video]
  - *VC7000--[Video Conferencing System]--(H.261)
  - *VCI/oem--[Vedio Codec Boards]--(H.261)
  - *VS1000--[Video Conferencing]

- **Audio Conferencing Tool**

  - *Nevot--[Audio Enabling Software]--(TCP)
  - *vat--[Audio Conferencing]--(Multicast IP)
  - XMedia Tools (v1.1)[Audio/Video Enabling Software]--(SMP)

- **Other Conferencing Tools**

  - Communique!--[Desktop Conferencing Software]--(TCP/IP)
  - DEC Notes (v 2.5)--[Computer Conferencing Tool]--(TCp/IP)
  - ShowMe--[Computer Conferencing Tool]--(TCP/IP)
  - Smart 2000 Conferencing (v.3.2)
  - VISIT Video--[Desktop Video]--(switched-56, ISDN)

- **Authoring Tools**

  - LinkWay live!--[Authoring Tool]
  - Maestro--[Distributed Multimedia Authoring Environment]--(UNIX)

- **Database Server**

  - [Notecards](#)--[Data Base/File Management]--(NFS)
  - [*Notes](#)--[Database System]
  - [*Xanadu](#)--[hypermedia database server]

- **Mail System**

  - [*Metamail](#)--[mail converting package]--(MIME)
  - [*MS Mail](#)--[email system]--(OLD, LAN, X.400)
  - [*WhiteMail](#)--[Mail User Agent]--(X.400)

- **Network Server**

  - [LAN Server Ultimedia](#)--[Server Software]--(TokenRing,Ethernet)
  - [StarWorks](#)--[Video Server]--(Ethernet)

- **Miscellaneous**

  - [CATSound Studio](#)--[Sound System]
  - [IRIS](#)--(Information System)--[UNIX]
  - [Media Weaver](#)--[toolkit]
  - [Model 3800A Multimedia Router](#)--[Ethernet Multimedia Router]--(XNS,DECnet,Appletalk,IP,IPX)
  - [Multimedia Quad AUI Fan Out](#)--[LAN Hubs]--(Ethernet, 802.3)
  - [*PACo](#)--[Compression and Playback System]
  - [*sd](#)--[Session Director]--(IP Multicast)
  - [SLATE (v 1.2.1)](#)--[System Design Tool]

Product name:CU-SeeMe

Available from:*Cornell University*
ftp site: gated.cornell.edu:/pub/video

Price: Free

Release date:1994

Description:CU-SeeMe is video conferencing software for the PC and Macintosh on the Internet.

Click [here](#) to go back the list of videoconferencing tools.

Product name: Person to Person/2 (V.1.0)

Available from:
IBM (International Business Machines)
Old Orchard Rd.
Armonk, NY 10504
800-426-3333; 914-765-1900
Direct sales: 800-426-7255 (IBM PC Direct)

Price: $280 (single-user); $1,875 (10-pack)

Release date: 1993

Compatible with: OS/2

Description:IBM no. 53G3997, 62G4037. Provides real-time collaborative conferencing for multiple users connected by LAN, ISDN, SNA and async communication links. Allows users to share and annotate data files, graphics, images and windowed application screens. Includes multi-party data/video calls for up to 5 participants. Optional video capture via IBM's ActionMedia II card.

Click here to go back the list of videoconferencing tools.

Product name: Picfon System

Available from:
Specom Technologies Corp.
2322 Walsh Ave.
Santa Clara, CA 95051
408-982-1880
FAX: 408-982-1883

Price: $2,995 (2 nodes)

Compatible with: PC-MS/DOS

Description: Videoconferencing system that works over ordinary phone lines. Provides still image of person user is calling. Video window can be set to one of 3 sizes.

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Product name:PSVC (V.2.1)

Available from:
Paradise Software, Inc.
7 Centre Dr., Ste. 9
Jamesburg, NJ 08831
609-655-0016
FAX: 609-655-0045

Price: $796-$995 (node-locked license);$29,850 (NIS domain license)

Release date: 1993

Compatible with: Sun SPARCstation/SunOS; HP OpenWindows 3.0

Network compatibility: TCP/IP

Description: Desktop video conferencing software product. Allows users to adjust frame speed, image quality and window size of video being sent across network. Video messages can be recorded to hard disk via UNIX mail subsystem to additional parties unable to join conference call.

Click here to go back the list of videoconferencing tools.

Product name: ShareVision Mac3000

Available from:
Creative Labs, Inc. (subsidiary of Creative Technology, Ltd.)
1901 McCarthy Blvd.
Milpitas, CA 95035
800-998-1000; 408-428-6600
Direct sales: 800-998-5227

FAX: 408-428-6699

Release date: 1995

Application: Video/Teleconferencing

Compatible with: Apple Macintosh

Descriptions: Desktop video conferencing product for Macs that support cross-platform connectivity between Macs and PCs over regular telephone lines. Includes color video camera with stand, ShareVision communications card, external 28.8K bits per second data/fax modem, ShareVision software and audio headset.

Click here to go back the list of videoconferencing tools.

Product name:XMedia Tools (V.1.1)

Available from:
Digital Equipment Corp. (DEC)
146 Main St.
Maynard, MA 01754-2571
800-344-4825; 508-493-5111
Direct sales: 800-722-9332 (DEC Direct/Digital PC)
FAX: 508-493-8780

Release date: 1992

Application: Application Development Systems

Compatible with: DEC DECstation 5000/ULTRIX, OSF/1

Description: Audio/video enabling software which assists software developers in building distributed multimedia applications, or adding audio/video components to existing applications or documentation. Includes Audio/Video Runtime Kit and Audio/Video Developer Kit. Provides on-line documentation, drivers, servers, sample applications, the Software Motion Pictures compiler and sample audio and video clips. Adds on-line documentation, audio and video libraries, audio clip library, and tools.

Allows multiple events to occur simultaneously. Allows commands and devices to be sequenced. Manages audio resources among different clients. Supports both DECaudio and the Personal DECstation 5000's audio capabilities. Displays live video in a workstation window. Converts a channel of analog video into a digital format. Attaches the digitized video frame to a user-specified window and allows sharing of the screen between the video window and other windows.

Allows user to set audio and video parameters such as global gain, sound library path, brightness, contrast, hue and saturation. Grabs frames from a video input using the Pioneer protocol. Plays Software Motion Pictures compiled video clip or live video through the DECvideo TURBOchannel option. Sound Browser application enables user to view a list of the sound libraries, select libraries from the list and play and record sounds.

Allows user to play sound and cut and paste pieces of sounds together. Includes a visual audio editor. Provides several Motif widgets and utility functions that interface X programs to audio.

Click here to go back the list of audio conferencing tools.

Product name: Communique! (V.3.2)

Available from:
InSoft, Inc.
4718 Old Gettysburg Rd., Ste. 307, Executive Park West I
Mechanicsburg, PA 17055
717-730-9501
FAX: 717-730-9504

Price: $2,295-$9,320 per user

Release date: 1994

Compatible with: Sun SPARCstation/Solaris, SunOS; HP Apollo 9000 Series 700/HP-UX; IBM RS/6000/AIX; Silicon Graphics; Digital UNIX **Network compatibility:** TCP/IP

Description: Desktop conferencing software that supports real-time full-motion color video using supported video boards. Consists of Communique!TV, Virtual Conference Room and integrated audio, video, shared whiteboard, shared applications text and graphics tools. Includes multipoint conferencing capability, hardware-based data compression, input device plug-and-play and fine tuning adjustments.

Click here to go back the list of other conferencing tools.

Product name:DEC Notes (V.2.5)

Available from:
Digital Equipment Corp. (DEC)
146 Main St.
Maynard, MA 01754-2571
800-344-4825; 508-493-5111
Direct sales: 800-722-9332 (DEC Direct/Digital PC)
FAX: 508-493-8780

Price: $2,500 (Workgroup); $6,600(Departmental); $11,000 (Enterprise)

Release date: 1993

Application: Video/Teleconferencing

Compatible with: DEC VAX, VAXstation, MicroVAX, Alpha AXP/OpenVMS VAX, OpenVMS AXP

Network compatibility: TCP/IP

Description: Provides distributed conferencing capabilities in WAN/LAN environments. Conferences can be restricted to specified group of users or fully open. Provides each user with notebook index allowing specification of which conference is to be accessed. Clients run on Windows and Macintosh.

Click here to go back the list of other conferencing tools.

Product name: ShowMe (v1.0)

Available from:
Sun Microsystems Computer Corp. (unit of Sun Microsystems, Inc.)
2550 Garcia Ave.
Mountain View, CA 94043-1100
800-821-4643; 800-821-4642 (CA); 415-960-1300
FAX: 415-969-9131

Category: Mass Media/Communications

Price: $2,000

Release date: 1995

Application: Radio/TV/Entertainment Industry

Compatible with: Sun SPARCstation/Solaris

Network compatibility: TCP/IP

Description: Allows users to transmit/broadcast video/audio source material to any computer running Solaris and ShowMe TV Receiver software. Allows user to broadcast multiple video/audio channels simultaneously. Provides broadcast scheduler. Provides compression techniques and allows users to be added to broadcast channel.

Click here to go back the list of other conferencing tools.

Product name: Smart 2000 Conferencing (V.3.2)

Available from:
SMART Technologies, Inc.
1177 11th Ave., SW, Ste. 600
Calgary, AB, CD T2R 1K9
403-245-0333
FAX: 403-245-0366

Price: $299

Release date: 1994

Compatible with: Windows 3.X

Network compatibility: Novell; NetBIOS; Banyan; TCP/IP; SPX/IPX

Description: Windows computer conferencing software. Allows groups at multiple locations to work interactively on computer-based information. Allows remote users to share Windows applications. Annotate any application screen snapshots and still video images. Saves any notes taken during meeting for later review or print out.

Can transport a user's ideas to multiple locations over standard phone lines, ISDN connections, LAN configurations, or WAN environments. Users can, from their desktops, conduct training sessions or meetings with a group of people in another office or another country. Users can also share any Windows application with remote sites and use a variety of pen tools and pen colors to electronically draw attention to any shared computer image. Enables multiple sites to work on a file that is accessible from a single user's PC, whether or not everyone uses the same software. Each site can write, erase, type over, or point to any part of a shared image. Allows users to place documents or pictures into their program notepads and discuss them during a conference, or to bring up blank pages to brainstorm ideas. A print capture function lets users print any file directly to their notepads, and a slide sorter function permits them to arrange their images in any order before and during the meeting. Can be used with either the SMART Board or the SMART Rear Screen for meetings or classroom situations. Can project any image onto the four-foot by three-foot touch sensitive whiteboard, allowing users to press on the whiteboard to interact with live applications.

Click here to go back the list of other conferencing tools.

Product name: Visit Video (V.2.0)

Available from:
Northern Telecom, Inc.
200 Athens Way, Northern Telecom Plaza
Nashville, TN 37228
800-667-8437; 615-734-4000
FAX: 615-734-5189

Price: $2,649 per user (grayscale); $4,499 per user (color)

Release date: 1994

Compatible with: Apple Macintosh II series

Description: Desktop videoconferencing system. Displays images of user and up to 8 others. Features include video image capture, allocation of bandwidth between video and data and 8 participant multiparty conferences.

Click here to go back the list of other conferencing tools.

Product name: LinkWay Live!(V.1.1)

Available from:
IBM (International Business Machines)
Old Orchard Rd.
Armonk, NY 10504
800-426-3333; 914-765-1900
Direct sales: 800-426-7255 (IBM PC Direct)

Compatible with: PC-MS/DOS M Minimum RAM required: 2 MB

Description: Authoring tool for multimedia presentations. Combines slides, clip art, music, voice, graphics and full-motion video in any way. Allows user to record from audio sources and play them back with the appropriate speech or music features. Plays production level video; captures and plays real time video; and captures and plays still pictures. Creates, sizes, moves and allows user to edit text, pictures and buttons. Supports the extended memory feature of DOS 4.0 and 5.0. Handles VGA-8 and XGA graphics modes.

Stores digital sound on a server, then sends it to individual workstations. Creates compressed digital movies, stores them on the server and plays them back on workstations that have DVI decompression cards. Captures low-speed movies or animation, stores them on the server and plays them on workstations with no additional hardware. Offers networked multimedia support. Includes built-in text editor and paint program.

Price: $269-$2,263

Release date: 1993

Click here to go back the list of authorng tools.

Product name: Maestro

Available from:
NetFRAME Systems, Inc.
1545 Barber Lane
Milpitas, CA 95035
800-852-3726; 408-944-0600
FAX: 408-434-4190

Price: $1,995

Release date: 1994

Application: Network Management

Compatible with: Windows 3.X

Description: Manages clustered server components within NetFrame servers. Allows users to reconfigure and hot-swap application and I/O subsystems across network. Allows administrators to manage all resources without disrupting network users.

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Product Name: NoteCards

Available From:
Venue
1624 Franklin St., Ste. 1212
Oakland, CA 94612

800-228-5325; 510-835-8856
FAX: 510-835-8251

Price: $495

Release Date: 1991

Application: Data Base/File Management

Compatible with: IBM RS/6000/AIX; Sun-3, 4, SPARCstation/SunOS,Solaris; DEC DECstation, DECsystem/ULTRIX; HP 9000 series 700,800/HP-UX; PC-MS/DOS

Network compatibility: NFS

Source language: LISP

Description: Hypertext system that allows user to formulate, structure, manage and present ideas. Features WYSIWYG text and graphic editors that create semantic network of electronic notecards connected by typed links.

Information organizer. Allows user to formulate, structure, manage and present ideas. Incorporates text, sketches or scanned graphics. Allows user to link cards with similar information. Groups cards into file boxes of related cards. Provides a map of the links among the cards. Allows user to build a structure for data and fit cards in as they arrive. Serves as a check list of things to do or as an alert of areas that need more research.

Allows user to put each datum into its own note card with a descriptive title. Cards can contain text and images mixed freely. Integrated editors support international characters and Kanji. Allows user to have an unlimited number of cards on the screen at a time. Sorts cards into related groups, or lets user place two cards side-by-side for comparison. Create a card for the main point, then link empty cards together to represent missing information. Includes advanced page layout, paragraph formatting and character editing.

Click here to go back the list of database server.

Product name:LAN Server Ultimedia (V.1.0)

Available from:
IBM (International Business Machines)
Old Orchard Rd.
Armonk, NY 10504
800-426-3333; 914-765-1900
Direct sales: 800-426-7255 (IBM PC Direct)

Compatible with: OS/2 Minimum RAM required: 16 MB Disk storage required: 400 MB

Network compatibility: Token-Ring; Ethernet

Description: Allows as many as 40 users to simultaneously access full motion video and sound applications from a single LAN server. Supports applications based on INDEO, DVI/AVI, Ultimotion and Sound Blaster. Turns standalone applications based on MMPM/2 or AVK into multi-user applications without modification. The client portion of the application can be downloaded from the LAN Server. Network administrators can control bandwidth to ensure that multimedia service does not disrupt other network traffic. Allows simultaneous transmission of multimedia applications and other data. Runs all playback applications with known characteristics. Provides installation and tuning aids to network administrators. Uses token-ring LAN Priority Architecture to reserve bandwidth in the network. Reserves server space for disk and file access.

Price: $3,195

Release date: 1993

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Product name: StarWorks (V.2.0)

Available from:
Starlight Networks, Inc.
325 E. Middlefield Rd.
Mountain View, CA 94043
415-967-2774
FAX: 415-967-0686

Price: $4,495-$24,995

Release date: 1994

Application: Network Resource Sharing

Compatible with: Sun SPARCserver, SPARCstation/Solaris

Network compatibility: Novell; AppleShare; LAN Manager; NFS;TCP/IP; Windows for Workgroups; Token-Ring; Ethernet; FDDI

Description: Client/server-based software that allows users on such LANs as Ethernet, Token Ring, and FDDI to share streaming video and audio data. Provides network delivery of any video and audio format and allows users to view applications while accessing other file servers on the LAN without impacting their current networked applications. Operates compatibly with such digital video systems as Indeo, MPEG, PLV, RTV, Cinepak, and motion JPEG. Provides transparent support for existing standalone multimedia applications.

Click here to go back the list of network server.

Product name:CAT Sound Studio

Available from:
Computer Aided Technology, Inc.
10132 Monroe Dr.
Dallas, TX 75229
214-350-0888
FAX: 214-904-0888

Compatible with: PC-MS/DOS. Minimum RAM required: 640 KB

Description: Multimedia sound system. Allows user to record, play, rewind, save, create special effects, watch sound waves of voice and develop talking slide shows. Enables user to transmit voice messages through network.

Price: $39-$59

Click here to go back the list of miscellaneous.

Product name:IRIS

Available from:
PREMIS Corp.
11610 Wayzata Blvd.
Minneapolis, MN 55343
800-346-0109; 612-545-0955
FAX: 612-545-1702

Price: $6,000-$50,000

Release date: 1994

Application: Retail Trade-Point-of-Sale

Compatible with: AT&T UNIX System V; SCO UNIX; IBM/AIX; NCR/UNIX

Description: Interactive Retail Information System. Includes inventory control, purchasing and receiving, back-office POS and sales analysis. Additional modules are Register POS, Warehouse Control, AR, Telxon Processing, Electronic Vendor Communication and Demographic Analysis. Interface includes windows, pull-down menus, look-up lists and relational database.

Click here to go back the list of miscellaneous.

Product name: MediaWeaver

Available from:ASD group at Stanford University

Description: MediaWeaver is a toolkit to manage, describe, find, and compose arbitrary associations of media on heterogeneous networks. By making essentially no assumptions about the internal structure of media, the MediaWeaver deals with arbitrary media formats. Authors should be able to produce elements of their media compositions using familiar applications -- such as commercial word processors and other off-the-shelf media editors. Visitors can browse or play with the media compositions in a multiplicity of customized, dynamic environments.

Click here to go back the list of miscellaneous

Product name: Model 3800A Multimedia Router

Manufacturer:
Bay Networks, Inc.
4401 Great America Pkwy., PO Box 58185
Santa Clara, CA 95054
800-776-6895; 408-988-2400
FAX: 408-988-5525

Description: Ethernet multimedia router

Network compatibility: Ethernet

Standard: IEEE-802.3 10BaseT

Protocols supported: XNS; DECnet; AppleTalk; IP; IPX

WAN services supported: X.25; ISDN; Frame Relay; SMDS; PPP

Price: $5,995

Date announced: 1994

Click here to go back the list of miscellaneous.

Product name: Multimedia Quad AUI Fan Out

Manufacturer:
Transition Engineering, Inc.
7090 Shady Oak Rd.
Eden Prairie, MN 55344
800-325-2725; 612-941-7600
FAX: 612-941-2322

Description:LAN Hubs

Network compatibility: Ethernet

Standard: IEEE-802.3 10Base2; 10Base5; 10BaseT

Price: $395

Click here to go back the list of miscellaneous.

Date announced: 1994

Product name:SLATE (V.1.2.1)

Available from:
TD Technologies, Inc. (SLATE Division)
2425 N. Central Expwy., Ste. 200
Richardson, TX 75080
800-669-4998; 214-669-9937
FAX: 214-669-9938

Release date: 1995

Application: System Design & Methodologies/CASE Tools

Compatible with: Sun-4, 5, SPARCstation/SunOS, Solaris; HP

Source language: C++

Description: System Level Automation Tool for Engineers. Multi-user, networked, object technology design automation tool for organizing and managing product life cycle. Allows user to manage requirements, explore alternatives, measure technical performance and automatically generate system documents. Includes transitional mapping and report generation.

Click here to go back the list of miscellaneous.

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Raj Jain is now at Washington University in Saint Louis, jain@cse.wustl.edu http://www.cse.wustl.edu/~jain/