

## Timeline Visual Effects, Computer Graphics, Computer Animation

1642	Blaise Pascal: mechanical calculator
1670	Juan Caramuel y Lobkowitz : binary principle
1760	Johann Heinrich Lambert: Lambert's law of ideal diffuse reflection, the foundation of Lambert shading
1801	Joseph-Marie Jacquard: loom with punching cards
1834	Charles Babbage: punching cards, calculator (Analytical Engine)
1839	Louis Jacques Mandé Daguerre: Daguerrotype
1843	Alexander Bain: fax machine
1850	Aimé Laussedat: photogrammetry
1854	George Boole: Boolean algebra
1878	Oberlin Smith: magnetic recording
1884	Eadweard Muybridge: still image series
1887	Etienne Jules Marey: chronophotography
1888	Thomas A. Edison: Kinetograph
1890	Herman Hollerith: punching strips
1895	Thomas A. Edison: stop trick, used in: The Execution of Mary, Queen of Scots
1895	Max and Emil Skladanowsky: film
1895	Auguste and Louis Lumière: film
1895	Louis Lumière: time manipulation, backwards running film, used in: Charcuterie mécanique
1897	G. A. Smith: double exposure, used in: The Corsican Brothers
1897	Georges Méliès: time lapse, used in: Carrefour de l'opera
1897	Albert E. Smith, J. Stuart Blackton: stop-motion animation, used in: Humpty Dumpty Circus
1898	Poulsen: magnetic recording
1899	Arthur Melbourne Cooper: animation, used in: Matches: An Appeal
1901	W. R. Booth: compositing, used in: The Hunted Curiosity Shop
1901	Georges Méliès: split screen, used in: L 'Homme à la tête en caoutchouc
1902	Georges Méliès: stop trick
1902	Georges Méliès: slow motion

## Timeline Visual Effects, Computer Graphics, Computer Animation

1902	Edwin S. Porter: stop-motion animation, used in: Fun in a Bakery Shop
1903	Edwin S. Porter: in-camera compositing, used in: The Great Train Robbery
1906	J. Stuart Blackton: animation, used in: Humorous Phases of Funny Faces
1906	J. Stuart Blackton: stop-motion animation, used in: A Midwinter Night's Dream
1907	Norman O. Dawn: Glasvorsatz, used in: California Missions
1907	Georges Méliès: Glasvorsatz, used in: 20 000 lieues sous les mers
1907	Richard Murphy: puppeteering, used in: The Eagle's Nest
1907	J. Stuart Blackton: stop-motion animation, used in: The Haunted Hotel
1907	Biograph: stop-motion animation, used in: Dolls in Dreamland
1907	Edwin S. Porter: stop-motion animation, used in: The Teddy Bears
1908	Emile Cohl: animation, used in: Fantasmagorie
1908	Segundo de Chomón: stop-motion animation, used in: El hotel eléctrico
1908	Arthur Melbourne Cooper: stop-motion animation, used in: Dreams of Toyland
1910	Mack Sennett: physical effects, used in: Keystone Kops
1910	Ladislaw Alexandrowicz Starewicz: stop-motion animation of insects, used in: Lucanus Cervus
1911	Winsor McCay: animation, used in: Little Nemo
1912	Enrico Guazzoni: stunts, used in: Quo Vadis?
1912	Bell & Howell: register pin movement
1912	Georges Méliès: puppeteering, used in: A la conquête du pôle
1913	Norman O. Dawn: prospect
1914	Winsor McCay: live-action and animation, used in: Gertie the Dinosaur
1914	Paul Wegener: , used in: Der Golem
1914	James Brautigan (Edison): motion control, used in: The Flying Duchess
1915	Max Fleischer: rotoscope, patented in 1917
1916	D. W. Griffith: stunts, used in: Intolerance
1916	Frank Williams: travelling mattes via Williams process (black and white)
1923	Eugen Schufftan: schufftan process (mirror trick, Schufftan-Verfahren), travelling matte

## Timeline Visual Effects, Computer Graphics, Computer Animation

1924	Fritz Lang: puppeteering, used in: Nibelungen
1924	Ladislaw Alexandrowicz Starewicz: live-action animation, used in: La petite chanteuse
1925	Fred Niblo: miniatures, used in: Ben Hur
1925	Willis O'Brien: puppeteering, used in: The Lost World
1926	Eugen Schufftan, Erich Kettelhut: rear projection, minatures, schufftan process, physical effects, stop motion, multiple exposures, used in: Metropolis
1928	Fred Gabourie: physical effects, miniatures, used in: Steamboat Willy Jr.
1930	Bell Labs: magnetic recording
1931	John P. Fulton (Universal): make-up, face, used in: Frankenstein
1933	Willis O'Brien: stop-motion animation, puppeteering, used in: King Kong
1933	John P. Fulton, Frank Williams (Universal): optical tricks, in-camera effects, used in: Invisible Man
1936	James Basevi, Russell A. Cully, A. Arnold Gillespie, Loyal Griggs, (Seeburg): light gun in a computer game, used in: Ray-O-Lite
1937	Claude E. Shannon (MIT): binary switching
1937	George Stibitz: binary adding machine
1938	Konrad Zuse: binary calculator, "computer"
1939	Academy of Motion Picture Arts and Sciences: Academy Award for Special Effects added
1941	Gregg Toland, Linwood Dunn: optical special effects, in-camera effects, camera movement, used in: Citizen Kane
1942	John Vincent Atanasoff (Iowa State University): first electronic binary computer (Atanasoff-Berry computer ABC)
1942	Eiji Tsuburaya: miniatures, used in: Kaigun Bakugeki-tai and Hawaii-Marei Oki Kaisen
1943	John P. Fulton (Universal): transformation, morphing, used in: Son of Dracula
1945	Moore School of Engineering, University of Pennsylvania: computer (ENIAC)
1946	Parry Moon, Domina Eberle Spencer (MIT): radiosity
1947	(Association of computer Machinery ACM):
1947	(International Organization for Standardization ISO): founded
1947	John Bardeen, Walter Brattain und William Shockley (Bell Laboratories): transistor

## Timeline Visual Effects, Computer Graphics, Computer Animation

1948	Gordon Jennings (Paramount), Technical Achievement Award 1951 (laut Rickitt) for: motion control, used in: The Big Clock, Samson and Delilah
1949	(MIT): computer (Whirlwind)
1949	Ray Harryhausen: stop-motion animation, used in: Mighty Joe Young
1950	Ben Laposky: oscilloscope art
1950	Norman McLaren: oscilloscope, used in: Around is Around
1950	O. L. Dupuy (MGM): motion control, used in: An American in Paris
1951	(MIT): light gun
1951	MIT: vectorscope monitor
1953	Hy Hirsch: oszilloscope, computer film, used in: Eneri
1954	Eiji Tsuburaya: monster, miniatures, used in: Gojira
1954	Mary Ellen Bute: oscilloscope, computer film, used in: Abstronic
1955	Bert Sutherland (MIT): light pen
1956	John P. Fulton (Paramount): compositing, used in: The Ten Commandments
1956	Lawrence Livermore National Labs: computer graphics, film recording
1956	John McCarthy: coined the term Artificial Intelligence
1956	Gordon Jennings (Paramount): motion control, used in: Forbidden Planet
1957	Russel Kirsch (National Bureau of Standards): photo manipulation, scan
1957	(ARPA Advanced Research Project Agency): founded by the Defense Department
1957	John Whitney Sr.: motion control
1957	Tom Diamond: graphics tablet, man-machine interface
1958	Alfred Hitchcock: trombone shot, title animation, used in: Vertigo
1958	Steven Coons, Ivan Sutherland, Timothy Johnson (MIT): image processing
1958	Petro Vlahos: traveling matte (sodium vapor)
1959	Ray Harryhausen: stop-motion animation, used in: The 7th Voyage of Sinbad
1959	(General Dynamics): film recording (Stromberg Carlson 4020)
1959	(General Motors Research Laboratory, IBM): scanning, CAD (DAC-1)

## Timeline Visual Effects, Computer Graphics, Computer Animation

1960	John McCarthy: Artificial Intelligence (LISP)
1960	John Whitney Sr. (Motion Graphics, Inc.): title animation
1960	Herb Freeman: coined the term computer graphics
1960	Peter Kubelka: first digital film, used in: Arnulf Rainer
1960	JCR Licklider (MIT): man-machine interaction
1960	William Fetter (Boeing): coined the term computer graphics
1960	Manfred E. Clynes, Nathan S. Kline: term cyborg popularized
1961	John Whitney Sr.: slitscan, used in: Catalogue
1961	Lee Harrison III (computer Image Corporation): computer animation, motion capture (Animac)
1962	Slug Russell, Shag Graetz, Alan Kotok (MIT): computer game, joystick, used in: SpaceWar! (interaktives computer game)
1962	Lee Harrison III: Scanimate, motion capture, digital character, used in: Mr. computer Image ABC
1962	JCR Licklider (MIT): first memo proposing the Internet
1963	Ivan Sutherland (MIT): graphic input device, man-machine interface (Sketchpad)
1963	John Whitney Sr.: motion control
1963	William Fetter (Boeing): digital character
1963	Charles (Chuck) Csuri: image processing
1963	Ray Harryhausen: stop-motion animation, used in: Jason and the Argonauts
1963	Edward Zajac (Bell Laboratories): computer film, used in: a simulated trip around the globe based on satellite still photographs
1963	Lawrence Roberts (MIT): hidden line
1964	Thomas Kurtz, John Kemeny: programming language (BASIC)
1964	Ivan Sutherland: 3D, computer animation, Sketchpad
1964	Petro Vlahos, Sci-Tech Award for: color difference travelling mattes
1965	Michael Noll and Bela Julesz (Bell Laboratories): stereo computer animation
1965	NASA Jet Propulsion Laboratory: image processing
1965	Charles (Chuck) Csuri (Ohio State University): CG program started
1965	(Technische Hochschule in Stuttgart): computer art: 1st computer art exhibition
1965	(Howard Wise Gallery NYC): computer art

## Timeline Visual Effects, Computer Graphics, Computer Animation

1966	James Whitney: computer film, used in: Lapis
1966	Ralph Baer: computer game, first consumer game, used in: Odyssey (computer game)
1966	Ivan Sutherland, Bob Sproull, Jim Clarke (Harvard University): virtual reality (The Sword of Damocles)
1966	John Whitney Sr.: computer film, used in: Permutations
1966	Ruth A. Weiss (IBM): hidden line
1967	Charles (Chuck) Csuri: computer animation, used in: Hummingbird
1967	Leslie Mezei (University of Toronto): morphing
1967	Philip Mittelman (MAGI): rendering, primitives, ray tracing (Synthavision)
1967	Kenneth E. Torrance, E. M. Sparrow (Cornell University): Torrance-Sparrow shading
1968	Douglas Trumbull: Slitscan, motion control, used in: 2001 A Space Odyssey
1968	Ivan Sutherland, Dave Evans (Evans & Sutherland): first computer graphics company
1968	Ivan Sutherland, Bob Sproull (Harvard): head mounted device HUD, virtual reality
1968	Doug C. Engelbart (Stanford Research Institute): mouse
1968	David Evans (University of Utah): Computer Graphics Department founded
1968	Tony Pritchett (Open University): computer animation, used in: Flexipede
1968	(Dicomed): body scans, medical image processing
1968	JCR Licklider (MIT): man-machine interaction
1968	Arthur Appel (IBM): ray tracing
1968	(London Institute of Contemporary Arts): computer art exhibition: Cybernetic Serendipity: The computer and the arts
1968	Aristid Lindenmayer (University of Utrecht): L-systems
1969	(Bell Labs): 3-bit frame buffer
1969	(UCLA, Stanford, Utah, University of California in Santa Barbara): Internet (ARPANET)
1969	Alan Kay (Xerox PARC): GUI
1969	(MAGI): 1st use of CGI for commercials - MAGI for IBM, used in: IBM (Commercial)
1970	Gary Watkins (University of Utah): scanline hidden surface removal
1970	(IMAX): premiere at Expo 1970 in Osaka
1970	(Evans & Sutherland): flight simulator

## Timeline Visual Effects, Computer Graphics, Computer Animation

1970	Pierre Bézier (Renault): Bézier splines
1970	(Kunstverein Munich): computer art exhibition in Munich (computer art – On the Eye of Tomorrow)
1970	Myron Krueger: virtual reality, used in: Videoplace
1970	(Bell Laboratories): CCD
1971	Fred I. Parke (University of Utah): face animation, used in: Animated Faces
1971	Charles (Chuck) Csuri (Ohio State University): CGRG computer Graphics Research Group founded
1971	(CMX Systems): non-linear editing (CMX-600)
1971	Henri Gouraud: Gouraud shading
1971	Nestor Burtnyk, Marcell Wein (National Research Council of Canada), Sci-tech Award 1996 for: keyframe animation, used in: Metadata
1972	(Atari): computer game, used in: Pong
1972	Martin Newell (University of Utah): depth sort hidden surface removal
1972	Xerox PARC: 8-bit frame buffer
1973	John Whitney Jr. (Triple-I), Nomination Oscar for: raster graphics, used in: Westworld
1973	Quantel: analogue-digital conversion, telecine
1973	Robert Abel & Associates: raster images for TV commercials
1973	Bob Metcalfe: (Ethernet)
1974	SIGGRAPH: first conference with 600 participants
1974	Ed Catmull (University of Utah): hidden surface removal
1974	Ed Catmull (University of Utah): Z-buffer
1974	Ed Catmull (University of Utah): texture mapping
1974	Phong Bui-Tuong (University of Utah): Phong shading
1974	Peter Foldes (National Research Council of Canada): in-betweening, morphing, used in: Hunger
1974	Gary Whisenhunt and Ray Wood (Southern Illinois University): computer game, MUD, used in: Dungeons and Dragons (computer game)
1974	A. N. Garroway, P. K. Grannell and P. Mansfield: 3D scan
1974	Alex Schure (NYIT): Computer Graphics Laboratory founded
1975	Benoît Mandelbrot: fractals
1975	Yoichiro Kawaguchi (University of Tokyo): procedural modelling (Growth)

## Timeline Visual Effects, Computer Graphics, Computer Animation

1975	: animatronic, used in: Jaws
1975	Richard Shoup (Xerox Palo Alto Research Group): paint program, Paint (SuperPaint)
1975	Martin Newell (University of Utah): Utah Teapot
1976	Gary Demos, John Whitney Jr. (Triple-I): digital human face, used in: Futureworld
1976	Steve Wozniak (Apple): computer Apple I
1976	Alvy Ray Smith (New York Institute of Technology): paint program (Paint)
1976	James F. Blinn, Martin E. Newell (University of Utah): reflection mapping
1976	Petro Vlahos (Ultimatte Corp.): real-time compositing (Ultimatte)
1976	Seymour Cray (Cray): computer (Cray-1)
1977	James F. Blinn (NASA Jet Propulsion Lab): computer simulation, used in: Voyager
1977	Xerox PARC: laser printer
1977	Bo Gehring Associates: computer displays, computer graphics in a feature film, used in: Demon Seed
1977	Ed Catmull, Alvy Ray Smith (NYIT): alpha channel
1977	John Dykstra: motion control (Dykstraflex)
1977	Nicodemus et al.: Bidirectional Reflectance Distribution Function BRDF
1977	James Blinn: Torrance-Sparrow shading
1978	Ed Catmull, Jim Clarke (University of Utah): subdivision surfaces
1978	James F. Blinn (University of Utah): bump mapping
1979	John Hughes (Robert Abel & Associates): title animation, black hole simulation, used in: The Black Hole
1980	Loren Carpenter (Boeing): fractals, used in: Vol Libre, Genesis-Demo Star Trek II: Wrath of Khan
1980	Turner Whitted (Bell Laboratories): ray tracing
1980	Namco: computer game, used in: Pac Man
1980	Frank Van der Veer, Barry Nolan: electronic compositing, used in: Flash Gordon
1980	David DiFrancesco, Bala S. Manian, Thomas L. Noggle, Sci-Tech Award 1998 for: laser scanner and film recording
1980	James F. Blinn: blobbies, used in: Cosmos (TV-Series)
1981	Richard Taylor (Triple-I): digital character, 3D scan, used in: Looker
1981	Quantel: paint program (Paintbox)

## Timeline Visual Effects, Computer Graphics, Computer Animation

1981	MTV: music video broadcasting
1981	Denis Muren, Ken Ralston, Phil Tippett (ILM): go-motion, used in: Dragonslayer
1981	Russell Noftsker (Symbolics Graphics Division): hardware
1981	Triple-I: digital character Adam Powers, the Juggler, used in: Triple-I Demo Reel
1981	Cook, Torrance: Cook-Torrance shading
1982	Ed Catmull, Alvy Ray Smith and others (Lucasfilm Computer Graphics Division): first full CGI shot in a feature film, used in: Star Trek II Genesis Effekt
1982	Geoffrey Gardner (Grumman Data Systems): clouds and smog, volumetric simulation
1982	(Japan Computer Graphics Lab JCGL): computer animation, full CGI, used in: The Yearling (TV)
1982	Tom Brigham (NYIT): morphing
1982	MAGI, Triple-I, Robert Abel & Associates, Digital Effects: first feature film with a higher percentage of CGI, used in: Tron
1982	Douglas Trumbull: , used in: Blade Runner
1982	NYIT: computer animation, used in: The Works (1979–1986, never finished)
1982	John Walker, Dan Drake (Autodesk Inc.): CAD (AutoCAD)
1982	(Cyberware): 3D scanning
1982	Tom Calvert, Chapman, J. , Patla, A (Simon Fraser University): motion capture
1983	William T. Reeves (Lucasfilm): particle animation, used in: Star Trek II: Wrath of Khan
1983	(Commodore): computer C 64
1983	Yoichiro Kawaguchi: computer animation, used in: Growth: Mysterious Galaxy
1983	ILM: videomatics (previs), used in: Return of the Jedi
1983	Lance Williams (NYIT): MIP mapping
1983	Carol M. Ginsberg, Delle Maxwell (MIT): motion capture
1983	(R. Greenberg Associates): digital compositing, used in: Zelig
1984	Cindy M. Goral, Kenneth E. Torrance, Donald P. Greenberg, Bennett Battaile (Cornell University): radiosity
1984	Hiroshima University: light, rain, heaven, used in: Still Life Etude
1984	Steven Jobs (Apple): computer, GUI (Macintosh)
1984	Abel & Associates: character animation, used in: Brilliance (Commercial)

## Timeline Visual Effects, Computer Graphics, Computer Animation

1984	Nick Castel (Digital Productions): (Cray 1), used in: The Last Starfighter
1984	(MAGI): compositing, virtual environment, used in: Where the Wild Things Are (TV)
1984	Lucasfilm: non-linear editing (EditDroid)
1984	Alvy Ray Smith (Lucasfilm): computer animation, used in: The Adventures of André & Wally B. (Kurzfilm)
1984	Gary Demos, John Whitney Jr. (Digital Productions Incorporated), Sci-Tech Award 1984 for: CGI
1984	Richard Bolt (MIT): man-machine interface
1984	Robert L. Cook (Cornell University): displacement maps
1985	Susan Amkraut (Ohio State University): flocking, used in: Eurhythmy
1985	Quantel: non-linear editing, compositing (Harry)
1985	: character animation, film recording, used in: Young Sherlock Holmes
1985	(Alias Research): animation software (Alias/1)
1985	Larry Cuba: computer film, used in: Calculated Movements
1985	Jaron Lanier, Jean-Jacques Grimaud (VPL): virtual reality
1985	(International Standard Organization ISO): CD-ROM
1986	Craig Reynolds (Symbolics, Inc.): flocking, Artificial Life (Boids), used in: Stanley and Stella in Breaking the Ice
1986	Al Barr (CalTech): soft body dynamics
1986	Jim Kajiya (CalTech): rendering equation
1986	Przemyslaw Prusinkiewicz (University of Calgary): L-systems
1986	John Lasseter (Pixar), Prix Ars Electronica for: computer animation, used in: Luxo Jr.
1986	Daniel Langlois (Softimage): animation software
1986	Vertigo Software: consumer animation software (Vertigo)
1986	(Walt Disney Animation Studios / Pixar): animation (Computer Animation Production System (CAPS))
1986	Jerry Weil: cloth simulation
1986	Pat Hanrahan (Pixar): rendering, patented in 1988 (RenderMan)
1986	(ILM): cyberscan, transformation, used in: Star Trek IV: The Voyage Home
1986	Brad deGraf, Bill Kroyer, Kevin Rafferty: digital character, used in: Hard Woman (Musikvideo)
1986	(Omnibus Computer Graphics): morphing, used in: Flight of the Navigator

## Timeline Visual Effects, Computer Graphics, Computer Animation

1986	(ILM): wire removal, used in: Howard the Duck
1986	(Lucasfilm): computer game, MUD, avatar, used in: Habitat
1986	Ken Ralston (ILM): transformation, camera shakes, used in: The Golden Child
1986	Rebecca Allen (NYIT): digital character, used in: Musique Non Stop (Musikvideo)
1986	The National Library of Medicine: medical visualization, used in: The Visible Human Project (database)
1986	Stephen Regelous (Massive Software), Sci-Tech Award 2003 for: crowd animation (Massive)
1987	David Haumann (Ohio State University): soft body dynamics, used in: Flexible Dynamics
1987	Demetri Terzopoulos, Andrew Witkin, Michael Kass , 2001 computer Graphics Achievement Award for: soft body dynamics
1987	Nadia Magnenat-Thalmann, Daniel Thalmann: digital character (University of Montreal), used in: Rendez-vous à Montreal
1987	Stéphane Singier, Thierry Prieur, Maurice Benayoun (Z-A Production): virtual reality
1987	Tomoyuki Nishita, Yasuhiro Miyawaki and Eihachiro Nakamae (Hiroshima University): atmosphere, volumetric effects
1988	Dennis Muren, Doug Smythe (ILM): first application of morphing in a feature film, used in: Willow
1988	Karl Sims (Whitney/Demos): particle system, used in: Leonardo's Deluge
1988	Karl Sims (Whitney/Demos): particle system, used in: Particle Dreams
1988	James Hahn (Ohio State University): rigid body dynamics, used in: Rigid Body Dynamics
1988	Nadia Magnenat-Thalmann, E. Primeau, and D. Thalmann: human face animation
1988	John Lasseter (Pixar), Prix Ars Electronica for: computer animation, used in: Red's Dream
1988	John Lasseter (Pixar): , used in: Tin Toy
1988	Nintendo: computer game Tetris (Game Boy)
1988	Brad deGraf, Michael Wahrman: character animation, digital character, motion capture, used in: Mike the Talking Head
1988	Loren Carpenter, Rob Cook, Ed Catmull, Tom Porter, Pat Hanrahan, Tony Apodaca, Darwyn Peachey (Pixar), Sci-Tech Award 1992 for: rendering (RenderMan)
1988	Jim Henson Productions: motion capture
1989	(Maxis): computer game SimCity
1989	Jeff Kleiser and Diana Walczak (Kleiser-Walczak Construction Company): motion capture, digital character, first synthespian Dozo, used in: Don't Touch Me
1989	John Knoll (ILM): reflection, refraction, digital compositing, face scan, used in: The Abyss
1989	Doug Smythe (IML): morphing, digital compositing, used in: Indiana Jones and the Last Crusade

## Timeline Visual Effects, Computer Graphics, Computer Animation

1989	Alias Research: animation software (PowerAnimator), used in: Abyss
1989	Avid Technology Inc.: non-linear editing
1989	John Lasseter (Pixar): computer animation, used in: Knick Knack
1990	Demetri Terzopoulos, Keith Waters (University of Toronto): human face
1990	Michael Kass, Imagina Grand Prix for: fluid dynamics, used in: Splash Dance
1990	Tim Berners-Lee (CERN): (HTML)
1990	John Knoll, Thomas Knoll: image processing (Photoshop)
1990	(Walt Disney Animation Studios / Pixar): animation (CAPS), used in: The Rescuers Down Under
1990	(IML): dry for wet, particle animation, used in: The Hunt for Red October
1990	Bruce Walters (ILM): Matte Painting, CCD Scanner (Photoshop), used in: Die Hard 2: Die Harder
1990	Eric Brevig (Dream Quest Images, ILM): first attempt to use motion capture for a feature film, finally replaced by rotoscoping, used in: Total Recall
1990	(Autodesk): animation software (3D Studio Max)
1991	Paul Debevec: image-based modeling
1991	Karl Sims, Prix Ars Electronica for: procedural modeling, used in: Panspermia
1991	Peter Greenaway: HDTV, used in: Prospero's Book
1991	(Apple): (QuickTime)
1991	(R. Greenberg Associates): compositing, used in: Diet Coke Commercial
1991	Ray Feeney, Richard Keeney, Richard Lundell, Sci-Tech Award 1991 for: film recording CRT (Solitaire)
1991	Randy Cartwright, David B. Coons, Lem Davis, Thomas Hahn, James Houston, Mark Kimball, Dylan W. Kohler, Peter Nye, Michael Shantzis, David H. Wolf (Walt Disney), Sci-Tech Award 1991 for: animation (CAPS)
1992	: motion capture, used in: Lawnmower Man
1992	Craig Reynolds: flocking, used in: Batman Returns
1992	Michael Kass, Andrew Witkin (Schlumberger), Prix Ars Electronica for: , used in: Reaction Diffusion Texture Buttons
1992	Karl Sims, Prix Ars Electronica for: , used in: Liquid Selves / Primordial Dance
1992	David Baraff, Andrew Wilkin (Carnegie Mellon University): flexible body dynamics
1992	(Kroyer Films): edge-detection for 2D animation, used in: Ferngully
1992	(Walt Disney Animation Studios): character animation, digital character, used in: Aladdin

## Timeline Visual Effects, Computer Graphics, Computer Animation

1992	(Ampex): data storage system (DST)
1992	Jim Hourihan (Alias Wavefront): particle animation (Dynamation)
1992	Tom Brigham, Douglas Smythe (ILM), Sci-Tech Award 1992 for: morphing
1993	Pascal Roulin, Prix Ars Electronica for: , used in: Lakmé
1993	(Cyan Worlds): computer game Myst
1993	George Romero (Id Software): computer game, used in: Doom
1993	Larry Yeager: Artificial Life, used in: Artificial Life
1993	Mark Leather, Les Dittert, Douglas Smythe, George Joblove, Sci-Tech Award 1993 for: wire removal
1993	Eric Chen Shenchang, Lance Williams (NYIT), View interpolation for image synthesis. SIGGRAPH 1993: 279-288 for: image-based rendering
1994	Demetri Terzopoulos (University of Toronto): Artificial Life
1994	Karl Sims: Artificial Life
1994	Midori Kitagawa (Ohio State University): procedural modelling and animation (BOGAS)
1994	(Sony): (Playstation)
1994	Paul Debevec (UC Berkeley): image-based modeling, rendering, and lighting, used in: Immersion
1994	Ken Perlin (NYU): digital character, Virtual Actors, Artificial Intelligence
1994	Gary Demos, Dan Cameron (Triple-I), Sci-Tech Award 1994 for: scanning
1994	Gary Starkweather (Pixar), Sci-Tech Award 1994 for: scanning
1994	Scott Squires (ILM), Sci-Tech Award 1994 for: scanning
1994	Lincoln Hu, Michael Mackenzie, Glenn Kennel, Mike Davis (ILM, Kodak), Sci-Tech Award 1994 for: scanning (linear array CCD)
1994	Ray Feeney, Will McCown, Bill Bishop, Les Dittert (RFX inc., PDI), Sci-Tech Award 1994 for: scanning (area array CCD)
1994	Mike Boudry (Computer Film Company), Sci-Tech Award 1994 for: scanning
1994	David Addleman, Lloyd A. Addleman, Sci-Tech Award 1994 for: 3D scanning (Cyberware)
1994	Petro Vlahos, Paul Vlahos, Sci-Tech Award 1994 for: compositing, keying (Ultimatte)
1994	George Sauve, Bill Bishop, Arpag Dadourian, Ray Feeney, Richard Patterson, Sci-Tech Award 1994 for: compositing, keying (Cinefusion)
1994	Michael Oren and Shree K. Nayar (Columbia University): Oren-Nayar shading
1995	John Lasseter (Pixar Animation Studios / Walt Disney): first fully computer animated movie, used in: Toy Story
1995	Alvy Ray Smith, Ed Catmull, Thomas Porter, Tom Duff, Sci-Tech Award 1995 for: compositing, Alpha

## Timeline Visual Effects, Computer Graphics, Computer Animation

1995	Douglas Smythe, Lincoln Hu, Douglas S. Kay (ILM), Sci-Tech Award 1995 for: compositing
1995	Computer Film Company CFC, Sci-Tech Award 1995 for: compositing
1995	Gary Demos, David Ruhoff, Dan Cameron, Michelle Feraud (Digital Productions), Sci-Tech Award 1995 for: compositing
1996	Ken Perlin (NYU), Academy Award for Technical Achievement 1996 for: noise and turbulence procedural texturing
1996	Paul Debevec (UC Berkeley): Image-based modeling and rendering, used in: The Campanile Movie (1997)
1996	Brian Knep, Craig Hayes, Rick Sayre, Thomas Williams, Sci-Tech Award 1996 for: direct input device
1996	Perry Kivolowitz, Garth A. Dickie, Sci-Tech Award 1996 for: morphing (Elastic Reality)
1996	John Schlag, Brian Knep, Zoran Kacic-Alesic, Thomas Williams (ILM), Sci-Tech Award 1996 for: texturing (ViewPaint)
1996	William (Bill) Reeves, Sci-Tech Award 1996 for: particle animation
1996	Jim Hourihan, Sci-Tech Award 1996 for: particle animation (Dynamation)
1996	James Kajiya, Timothy Kay, Sci-Tech Award 1996 for: hair and fur
1996	Jeffery Yost, Christian Rouet, David Benson, Florian Kainz, Sci-Tech Award 1996 for: hair and fur
1996	Areté: water simulation
1997	George Borshukov (University of California at Berkeley): image-based modelling
1997	Jan Pinkawa: subdivision surfaces, used in: Geri's Game
1997	Bill Kovacs, Roy Hall (Wavefront), Sci-Tech Award 1997 for: animation software (Advanced Visualizer)
1997	James J. Keating, Michael Wahrman, Richard Hollander (Wavefront), Sci-Tech Award 1997 for: animation software
1997	Greg Hermanovic, Kim Davidson, Mark Elendt, Paul H. Breslin (Side Effects), Sci-Tech Award 1997 for: procedural animation (Prisms)
1997	Craig Reynolds, Sci-Tech Award 1997 for: animation
1997	Eben Ostby, William Reeves, Samuel J. Leffler, Tom Duff, Sci-Tech Award 1997 for: animation (Marionette), used in: Toy Story
1997	Dominique Boisvert, Rejean Gagne, Daniel Langlois, Richard Laperrière (Softimage), Sci-Tech Award 1997 for: animation (Actor)
1997	Richard Chuang, Glenn Entis, Carl Rosendahl (PDI), Sci-Tech Award 1997 for: procedural animation
1997	Cary Phillips (ILM), Sci-Tech Award 1997 for: face animation (Caricature)
1997	Richard Shoup, Alvy Ray Smith, Thomas Porter, Sci-Tech Award 1997 for: paint systems
1997	John Gibson, Rob Krieger, Milan Novacek, Glen Ozymok, Dave Springer (Alias), Sci-Tech Award 1997 for: animation (PowerAnimator)
1998	Andrew Witkin, David Baraff (Carnegie Mellon): cloth simulation, used in: Stuart Little, Monsters Inc.
1998	Robert Legato (Digital Domain), Prix Ars Electronica for: crowd animation, motion capture, used in: Titanic

## Timeline Visual Effects, Computer Graphics, Computer Animation

1998	Gary Tregaski, Dominique Boisvert, Philippe Panzini, André Leblanc (Discreet), Sci-Tech Award 1998 for: compositing software (Flame, Inferno)
1998	Douglas R. Roble (Digital Domain), Sci-Tech Award 1998 for: tracking (TRACK)
1998	Thaddeus Beier (Hammerhead), Sci-Tech Award 1998 for: tracking (ras_track)
1998	Nick Foster, Sci-Tech Award 1998 for: fluid dynamics
1998	Gary Tregaskis, Dominique Boisvert, Philippe Panzini und André Leblanc (Discreet Logic), Sci-Tech Award 1998 for: tracking, compositing (Flame)
1999	Paul Debevec: Image-based lighting, used in: Fiat Lux
1999	Christian Volckman, Prix Ars Electronica 2000 for: bluescreen, virtual environment, used in: Maaz
2000	Rob Cook, Loren Carpenter, Ed Catmull (Pixar), Sci-Tech Award 2000 for: rendering (RenderMan)
2000	Venkat Krishnamurthy, Sci-Tech Award 2000 for: modeling (Paraform)
2000	George Borshukov, Kim Liberi, Dan Pipponi (Manex), Sci-Tech Award 2000 for: image-based modeling
2001	Lance Williams, Sci-Tech Award 2001 for: CGI
2001	Garland Stern, Sci-Tech Award 2001 for: cel paint
2001	Bill Spitzak, Paul Van Camp, Jonathan Egstad, Price Pethel (D2 Software), Sci-Tech Award 2001 for: compositing (Nuke)
2001	Steve Sullivan, Eric L. Schafer (ILM), Sci-Tech Award 2001 for: tracking (MARS)
2001	Uwe Sassenberg, Rolf Schneider (3-D Effects), Sci-Tech Award 2001 for: tracking (3-D Equalizer)
2001	John R. Anderson, Jim Hourihan, Cary Phillips, Sebastian Marino (ILM), Sci-Tech Award 2000 for: hair, cloth, skin, muscle simulation
2002	(Alias Wavefront), Sci-Tech Award 2002 for: animation software (Maya)
2002	Greg Hermanovic, Kim Davidson, Mark Elendt, Paul H. Breslin (Side Effects), Sci-Tech Award 2002 for: procedural animation (Houdini)
2002	Dick Walsh (PDI/Dreamworks), Sci-Tech Award 2001 for: face animation, used in: Shrek
2002	Thomas Driemeyer (mental images), Sci-Tech Award 2002 for: rendering (mental ray)
2002	Eric Daniels, George Katanics, Tasso Lappas, Chris Springfield, Sci-Tech Award 2002 for: rendering (Deep Canvas)
2005	Ron Fedkiw, ACM Siggraph Significant New Researcher Award 2005 for: fluid dynamics
2009	Joe Letteri (Weta Digital): facial performance capture, used in: Avatar