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Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

# Selected Timelines of Computer Animation and Visual Effects

## This handout contains a selection

of computer animation and effects timelines and milestones between 1970 and 2002.

Each of the categories is color-coded. The live action feature movies with computer-generated visual effects appear in green. Winners of the AMPAS award for visual effects are marked with an asterisk, the runners-up are listed right next to it. In magenta are animated feature movies, most of which include three-dimensional computer animation. Independent productions and short computer animations are in blue boxes.

(Four additional categories that can be found in the book are not included here: Video and Computer Games, Computer Technology and Industry Events, Related Technologies and Events, and Television Programs.)

Visual Effects Movies

Animated 2D/3D Feature Movies

Independent Shorts

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The Art of 3D Computer Animation and Effects

# **1970s** Timeline of Computer Animation and Visual Effects

Categories

VFX Movies

Animated Features

Independent Shorts

Visual Effects Movies: Tora! Tora! Tora! \* Patton Other Movies w/VFX: Airport

1970

M\*A\*S\*H

Visual Effects Movies: Bedknobs and Broomsticks \* When Dinosaurs Ruled the Earth Other Movies w/VFX: Silent Running

1971

**Fritz the Cat** by Ralph Bakshi

**Animated Faces**, by Fred I. Parke at University of Utah 1972

Visual Effects Movies: The Poseidon Adventure \* (only nominee)

**Heavy Traffic** by Ralph Bakshi (No AMPAS Visual Effects Award given this year). Visual Effects Movies:

The Exorcist Westworld

1973

The Savage Planet by René Laloux

Warner Bros. and Hanna-Barbera's Charlotte's Web Visual Effects Movies: Earthquake \* (only nominee) Other Movies w/VFX:

1974

Chinatown The Towering Inferno Young Frankenstein

**Hunger** by Peter Foldes, National Film Board of Canada.

1975

1976

1977

1978

1979

Visual Effects Movies: The Hindenburg \* (only nominee) Other Movies w/VFX: Jaws Visual Effects Movies: King Kong \* and Logan's Run \* (dual award) Visual Effects Movies: Star Wars \* Close Encounters of the Third Kind Other Movies w/VFX: Airport '77 The Spy Who Loved Me

Voyager animated simulations of space exploration by Jim Blinn at Jet Propulsion Lab. Visual Effects Movies: Superman \* (only nominee) Other Movies w/VFX:

The Lord of the Rings by Ralph Bakshi

Capricorn One

Visual Effects Movies: Alien \* The Black Hole

Moonraker / 1941 Star Trek-The Motion Picture Other Movies w/VFX: Apocalypse Now

Galaxy Express 999, animé by Rintaro and Kon Ichikawa

Hayao Miyazaki's **The Castle of Cagliostro**.

## Early 1980s Timeline of Computer Animation and Visual Effects

1982

Categories

VFX Movies

Animated Features

Independent Shorts

Visual Effects Movies: The Empire Strikes Back \* (only nominee) Other Movies w/VFX: Escape from New York Battle Beyond the Stars Xanadu

1980

The Empire Strikes Back takes "effects movies" to a new level of complexity and accomplishment.

Paul Grimault's **Le roi** et l'oiseaux (The King and Mr. Bird).

**Vol Libre**, animation of fractal landscapes by Loren Carpenter

Visual Effects Movies:
Raiders of the Lost
Ark \*
Dragonslayer
Other Movies w/VFX:
An American Werewolf
in London
Clash of the Titans
Looker

1981

Looker, becomes first film featuring the first virtual actor, "Cindy," made from simulated body scans of actress Susan Dey.

The Secret of Nimh, by Bluth Productions

**American Pop** by Ralph Bakshi

Visual Effects Movies: E.T. the Extra-Terrestrial \* Blade Runner Poltergeist Other Movies w/VFX: Firefox

Star Trek II-The Wrath of Kahn TRON

**TRON** is first live action film with over 20 minutes of 3D computer animation.

ILM's Genesis Effect created for Star Trek II, is the first all computer-animated visual effects movie shot.

Jim Henson creates The Dark Crystal with puppetry, stop motion and animatronics.

**Le maitres du temps** by René Laloux

Non-Edge Cloud and Smoke Simulations by Geoffrey Gardner at Grumman Data Systems

Carla's Island by Nelson Max at the Lawrence Livermore National Lab Visual Effects Movies: Return of the Jedi \* (only nominee) Octopussy

1983

Fire and Ice by Ralph Bakshi.

Growth: Mysterious Galaxy, the first in a series of semi-abstract animations by artistprogrammer Yoichiro Kawaguchi. Visual Effects Movies: Indiana Jones and the Temple of Doom \* Ghostbusters 2010

1984

Nausicaä of the Valley of the Wind by Hayao Miyazaki.

**Bio-Sensor** created at Osaka University and Toyo Links, is an early example of modeling with blobby surfaces and figure locomotion.

Still Life Etude, an early simulation of light, fog, rain, and skies created at Hiroshima University.

Trailer for **The Works**, an unfinished New York Institute of Technology movie.

### Late 1980s Timeline of Computer Animation and Visual Effects

 1985
 1986
 1987
 1988
 1989

Categories

VFX Movies

Animated Features

Independent Shorts

Visual Effects Movies:
Cocoon \*
Return to Oz
Young Sherlock
Holmes
Other VFX Movies:
The Last Starfighter
Back to the Future

The Last Starfighter created with a Cray supercomputer at Digital Productions, first live action feature film with realistic computer animation.

The Black Cauldron, first Disney animated feature film to use 3D CG technology

**Brilliance** commercial by Abel and Associates features sexy female robot with convincing realistic motion.

**Growth III** by Yoichiro Kawaguchi

**Tony de Peltrie** by Pierre Lachapelle and team.

Visual Effects Movies: Aliens \* Little Shop of Horrors Other VFX Movies: Flight of the Navigator

In Disney's **The Great Mouse Detective** the moving gears in the chase sequence are created with 3D computer animation.

Laputa: Castle in the Sky by H. Miyazaki

An American Tail by Don Bluth

Jim Henson's Labyrinth

John Lasseter's **Luxo Jr.** nominated in
AMPAS Animated
Short Films category.

The still image Road to Point Reyes redefines realism by compositing graftals and fractals to portray a landscape.

Visitor on a Foggy Night by the CG Research Group at Hiroshima University Visual Effects Movies: Innerspace \* Predator

Akira by Katsuhiro Otomo popularizes animé, feature-length sci-fi Japanese animation, with international audiences.

Stanley and Stella: Breaking the Ice by Symbolics Graphics and Whitney Demo Productions, early flock animation

Red's Dream by Pixar

**Baloon Guy** by Chris Wedge at Ohio State University

Rendezvous in Montreal by Nadia Magnenant Thalmann and team. Visual Effects Movies: Who Framed Roger Rabbit \* Die Hard Willow

Who Framed Roger Rabbit breaks new ground by combining live actors with animated characters.

Many cars in Disney's **Oliver & Company** are 3D CGI models.

**My Neighbor Totoro** by Hayao Miyazaki

Stop motion, puppetry and live action in Jan Svankmajer's **Alice** 

The Land Before Time by Don Bluth

**Graveyard of the Fireflies** by animé
director Isao Takahata

Pixar's **Tin Toy** by John Lasseter and William Reeves wins AMPAS award.

**Technological Threat** by William Kroyer and Brian Jennings

**Locomotion**, a Pacific Data Images short, early example of 3D squash-and-stretch.

**The Sky**, simulations of light and skies at Hiroshima University.

Visual Effects Movies:
The Abyss \*
The Adventures of
Baron Munchausen
Back to the Future
Part II
Other VFX Movies:
Indiana Jones and the
Last Crusade
Field of Dreams

The Abyss includes first convincing 3D character animation.

Ghostbusters II

The Little Mermaid is Disney's last film to use traditional ink and paint, CG closing shot.

**Kiki's Delivery Service** by Hayao Miyazaki opens in Japan.

All Dogs Go to Heaven by Don Bluth

Knickknack by Pixar, Don't Touch Me by Kleiser-Walczak, early motion capture character animation

Preview of NYIT's **The Works**, **The Little Death** by Matt Elson at
Symbolics, **Eurythmy**by Susan Amkraut and
Michael Girard

### Early 1990s Timeline of Computer Animation and Visual Effects

1992

Categories

VFX Movies

Animated Features

Independent Shorts

Visual Effects Movies:
Total Recall \*
(only nominee)
Other VFX Movies:
Back to the Future III
Die Hard 2: Die Harder
Dick Tracy
Ghost
The Hunt for Red

1990

Disney's **The Rescuers Down Under**, first
Disney animated feature film done entirely with the first version of the CAPS System

October

Hanna-Barbera's Jetsons: The Movie includes computer-animated vehicles and environments.

Karl Sims' **Panspermia**, early particle systems computer animation.

Visual Effects Movies: Terminator II: Judgment Day \* Backdraft Hook Other VFX Movies: Star Trek VI

1991

Terminator II is the first mainstream blockbuster movie with multiple morphing effects and simulated natural human motion.

The animated camera in Disney's **Beauty and The Beast** travels in 3D space; first animated film nominated for AMPAS Best Picture.

Mutations by William Latham and IBM UK Don Quichotte by Video System uses keyframe character animation techniques.

Primordial Dance by Karl Sims uses particles. Leaf Magic by Alan Norton uses motion dynamics animation. Visual Effects Movies: Death Becomes Her \* Aliens 3 Batman Returns Other VFX Movies: Bram Stoker's Dracula The Lawnmower Man

Early 1990s defined by succesful revival of live action feature movies with visual effects.

**Aladdin** is Disney's first use of fully computer-animated character and 3D organic surfaces.

**Porco Rosso** by Hayao Miyazaki

Kroyer Films' handdrawn Fern Gully... The Last Rainforest uses edge-detection filters to draw outlines around 3D objects.

**Cool World** by Ralph Bakshi

**Liquid Selves**, particle systems animation by Karl Sims

The Seven Wonders of the World by Electric Images pushes the boundaries of architectural visualization. Visual Effects Movies: Jurassic Park \* Cliffhanger The Nightmare Before Christmas Other VFX Movies: The Fugitive

1993

Jurassic Park sets new standards for realism, inverse kinematics and digital compositing.

Tim Burton's The Nightmare Before Christmas takes stop motion to new heights and becomes a classic.

Computer animation for **Babylon 5** TV series is produced with off-the-shelf microcomputer systems.

First **Polar Bears** commercial for Coca-Cola by Rhythm & Hues.

Visual Effects Movies: Forrest Gump \* The Mask True Lies Other VFX Movies: The Flintstones Speed

1994

The wildebeest stampede in Disney's **The Lion King** is a tour de force in the integration of traditional with 3D computer animation.

Jan Svankmajer's Faust

**Thumbelina** by Don Bluth

**Listerine Arrows** TV commercial by Pixar

**Immersion**, an early experiment in image-based rendering

### Late 1990s Timeline of Computer Animation and Visual Effects

1997

1996

Categories

VFX Movies

Animated Features

**Independent Shorts** 

Visual Effects Movies:
Babe \*
Apollo 13
Other VFX Movies:
Batman Forever
Casper / Congo
La Cité des enfants
perdus
Crimson Tide
Goldeneye
Judge Dredd
Jumanji / Stargate
Species
Twelve Monkeys
Waterworld

1995

**Toy Story** is first fully 3D computer-animated feature movie.

The canoe and Mother Willow sequences in Disney's **Pocahontas** created with 3D CG.

Mamoru Oshii's **Ghost** in the Shell (U.S in '98)

First-person point of view animation in New Wave's LBE **The Volcano Mine** 

**Dance Fever** commercial for Shell Oil by R/GA squashes and stretches cartoon cars.

Chris Landreth's the end

Visual Effects Movies: Independence Day \* Dragonheart Twister Other VFX Movies: Mission Impossible The Rock Star Trek: First Contact

James and the Giant Peach combines stop motion and computer animation techniques.

Disney's **Hunchback of Notre Dame** has 3D confetti, crowds, and architectural details.

Warner Bros.'s **Space Jam** features the Loony
Tunes characters.

The Fight by Acclaim Entertainment proves viability of mocap for character animation.

Joe's Apartment Roach Rally by Blue Sky Productions.

Visual Effects Movies: Titanic \* The Lost World: Jurassic Park Starship Troopers Other VFX Movies: Air Force One Alien: Resurrection Batman & Robin Con Air / Contact Dante's Peak The Fifth Element Flubber Mars Attacks! Men in Black Spawn / Volcano

**Princess Mononoke** by Hayao Miyazaki opens in Japan (U.S in '99).

Hydra sequence and morphed clouds in Disney's **Hercules**.

Fox's **Anastasia** by Don Bluth

I Married a Strange Person by Bill Plympton

Pixar's **Geri's Game** by Jan Pinkava wins AMPAS award, with subdivision surfaces.

**Virtual Andre** commercial by Digital Domain uses mocap.

Visual Effects Movies:
What Dreams May
Come \*
Mighty Joe Young
Armageddon
Other VFX Movies:
Deep Impact
Deep Rising
Godzilla
Lost in Space
Mouse Hunt
Pleasantville

1998

X-Files: The Movie

Disney/Pixar's A Bug's

**Small Soldiers** 

Sphere

**Life** and DreamWorks/PDI's **ANTZ** present all-CG insect worlds.

CG Hun crowd simulation and props in Disney's **Mulan**.

DreamWorks' **Prince of Egypt** with stylized characters and superb effects animation.

Nickelodeon's lowbudget **Rugrats Movie** is box-office success.

Kirikou et la Sorcière, by Michel Ocelot, signals revival of French animated features.

Chris Wedge's **Bunny** at Blue Sky Studios wins Animated Short AMPAS Award.

Bingo by Chris Landreth explores neo-Dada theatre. IMAX-LBE Race For Atlantis animated by Rhythm & Hues. Visual Effects Movies: The Matrix \* Star Wars Episode I— The Phantom Menace Stuart Little Other VFX Movies: End of Days Fight Club The Mummy Sleepy Hollow Wild Wiest

1999

2D brushstokes recreated on 3D geometry in Disney's **Tarzan**.

Toy Story 2 takes Buzz and Woody to new levels of comedic and technical achievement.

Disney's **Fantasia 2000** in IMAX, with 3D CG.

Fresh animation style and NPR rendering in Brad Bird's Iron Giant.

**Le Château des Singes**, by Jean-F. Laguionie.

South Park: Bigger, Longer & Uncut, uses 3D billboard technique.

Daniel Robichaud's **Tightrope**, playful jester confronts suit.

Bjork's **All is Full of Love** music video.

NPR rendering and surreal comedy of spatial errors in PDI's **Fishing** and **Spatial Frames** 

**Fiat Lux** by Paul Debevec, a landmark in image-based rendering

Piotr Karwas' **The Mask** receives first SIGGRAPH Jury Honors award.

### Early 2000s Timeline of Computer Animation and Visual Effects

2000 2001 2001 (cont.) 2002 2002 (cont.)

Categories

VFX Movies

Animated Features

**Independent Shorts** 

Visual Effects Movies: Gladiator \* Hollow Man The Perfect Storm Other VFX Movies: 102 Dalmatians The Adventures of Rocky & Bullwinkle Cast Away The Cell / Dinosaur Dr. Seuss' How the Grinch Stole Christmas Mission: Impossible 2 Mission to Mars O Brother Where Art Thou? Pitch Black Red Planet / X-Men

Disney's **Dinosaur** combines live action backgrounds with realistic 3D computer animated characters.

Aardman Sudio's/ DreamWorks stop motion Chicken Run

DreamWorks' The Road to El Dorado

Fox's **Titan A.E.** by Don Bluth

Disney's Emperor's New Groove and The Tigger Movie

Nickelodeon's Rugrats in Paris

Pixar's **For the Birds** by Ralph Eggleston wins AMPAS award.

**Onimusha** is Best Animated Short at SIGGRAPH 2000.

Victor Navone's **Alien Song** is widely viewed on the Web.

Visual Effects Movies: The Lord of the Rings: The Fellowship of the Ring ' Artificial Intelligence Pearl Harbor Other VFX Movies: Black Hawk Down Cats & Dogs **Enemy at the Gates Evolution** The Fast and the **Furious** Harry Potter and the Sorcerer's Stone Jurassic Park III Lara Croft Tomb Raider Monkeybone The Mummy Returns Planet of the Apes

The AMPAS creates new category for Best Animated Feature.

Spy Kids

Swordfish

Animated Movies: '01 Shrek \* Jimmy Neutron Boy Genius Monsters Inc. Other: Atlantis: The Lost **Empire** Final Fantasy: The **Spirits Within** Marco Polo: Return to Xanadu **Mutant Aliens Osmosis Jones** The Prince of Light Recess: School's Out The Trumpet of the Swan Waking Life

Shrek combines irreverent comedy with cutting-edge rendering, wins AMPAS Animated Feature first award.

Pixar's **Monsters Inc.** story turns the tables on who scares who.

Metropolis, animé directed by Rintaro

Nickelodeon's Jimmy Neutron Boy Genius delivers using off-theshelf software and below-average budget.

Square's Final Fantasy: The Spirits Within displays dazzling CG technique but fails to capture the mainstream box office

Mainframe motioncaptures American Ballet Theatre dancers to animate characters in Mattel's all-CG direct-to-video Barbie in the Nutckracker.

Pixar short **Mike's New Car** by Pete Docter and Roger Gould.

Van Phan's **Values** is Best Animated Short at SIGGRAPH 2001. Visual Effects Movies: The Lord of the Rings: The Two Towers \* Spiderman Star Wars: Episode II -

Attack of the Clones Other VFX Movies: Astérix & Obélix: Mission Cléopâtre Blade 2 Clockstoppers

Eight Legged Freaks
Harry Potter and the
Chamber of Secrets
Men in Black 2
Minority Report
Panic Room
Reign of Fire
Resident Evil

Die Another Day

The Scorpion King Solaris Spy Kids 2: Island of Lost Dreams

Scooby-Doo

Star Trek: Nemesis Stuart Little 2 The Time Machine xXx

The Lord of the Rings 2 uses a combination of performance capture and keyframe techniques to animate the Gollum character, superb crowd simulation software.

**Star Wars: Episode II** is shot on HD video with massive amounts of blue screen and virtual characters.

Robert Rodriguez's Spy Kids 2 uses HD and desktop production to benefit an independent production model.

Hayao Miyazaki's **Spirited Away** wins AMPAS award with fantastic story.

Fox's **Ice Age** by Chris Wedge mixes physical comedy with refined ray tracing rendering.

Animated Movies: '02 Spirited Away \* Ice Age Lilo & Stitch Spirit: Stallion of the Cimarron **Treasure Planet** Other: El bosque animado (The Living Forest) Hey Arnold! **Mutant Aliens** The Powerpuff Girls First Feature Return to Never Land The Wild Thornberrys

Sylvain Chomet's Les Triplettes de Belleville is released in France, combines 2D/3D.

Disney's Lilo & Stitch pairs a Hawaiian girl and her alien pet, luscious retro watercolors.

Disney's **Treasure Planet** displays sophisticated 2D/3D technique, fails at box office.

Mattel's direct-to-video Barbie as Rapunzel

Memorable commercials for Blockbuster's Carl and Ray, Levi's, X-Box Mosquito, and Game Boy Advance.

Eric Armstrong's **The ChubbChubbs** wins AMPAS Short Award.

Tomek Baginski's **The Cathedral** is Best Short at SIGGRAPH 2002.