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 |

For additional information visit:

www.artof3d.com

1970	1971	1972	1973	1974

Categories

VFX Movies

Animated Features

Independent Shorts

1970

Visual Effects Movies:
Tora! Tora! Tora! *
Patton
Other Movies w/VFX:
Airport
M*A*S*H

1971

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

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

1973

(No AMPAS Visual
Effects Award given
this year).
Visual Effects Movies:
**The Exorcist
Westworld**

The Savage Planet by
René Laloux

Warner Bros. and
Hanna-Barbera's
Charlotte's Web

1974

Visual Effects Movies:
Earthquake *
(only nominee)
Other Movies w/VFX:
**Chinatown
The Towering Inferno
Young Frankenstein**

Hunger by Peter
Foldes, National Film
Board of Canada.

1975	1976	1977	1978	1979

1975

Visual Effects Movies:
The Hindenburg *
(only nominee)
Other Movies w/VFX:
Jaws

1976

Visual Effects Movies:
King Kong *
and **Logan's Run ***
(dual award)

1977

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.

1978

Visual Effects Movies:
Superman *
(only nominee)
Other Movies w/VFX:
Capricorn One

The Lord of the Rings
by Ralph Bakshi

1979

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**.

SELECTIONS FROM KERLOW'S "THE ART OF 3D COMPUTER ANIMATION AND EFFECTS"

1980	1981	1982	1983	1984

Categories

VFX Movies

Animated Features

Independent Shorts

1980

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

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

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1981

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

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

1982

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

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1983

Visual Effects Movies:
Return of the Jedi *
(only nominee)
Octopussy

Fire and Ice by Ralph Bakshi.

Growth: Mysterious Galaxy, the first in a series of semi-abstract animations by artist-programmer Yoichiro Kawaguchi.

1984

Visual Effects Movies:
Indiana Jones and the Temple of Doom *
Ghostbusters
2010

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.

SELECTIONS FROM KERLOW'S "THE ART OF 3D COMPUTER ANIMATION AND EFFECTS"

1985 | 1986 | 1987 | 1988 | 1989

1985

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.

1986

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

1987

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.

1988

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.

1989

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
Ghostbusters II

The Abyss includes first convincing 3D character animation.

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

SELECTIONS FROM KERLOW'S "THE ART OF 3D COMPUTER ANIMATION AND EFFECTS"

	1990	1991	1992	1993	1994

Categories

VFX Movies

Animated Features

Independent Shorts

1990

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
 October**

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

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

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

1991

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

Terminator II is the
first mainstream block-
buster 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 animat-
ed 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.

1992

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' hand-
drawn **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 architec-
tural visualization.

1993

Visual Effects Movies:
Jurassic Park *
Cliffhanger
**The Nightmare Before
 Christmas**
Other VFX Movies:
The Fugitive

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 micro-
computer systems.

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

1994

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

The wildebeest stam-
pede 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

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

Categories

VFX Movies

Animated Features

Independent Shorts

2000

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.

2001

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
Spy Kids
Swordfish

The AMPAS creates new category for Best Animated Feature.

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.

2001 (cont.)

Metropolis, animé directed by Rintaro

Nickelodeon's **Jimmy Neutron Boy Genius** delivers using off-the-shelf 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 motion-captures American Ballet Theatre dancers to animate characters in Mattel's all-CG direct-to-video **Barbie in the Nutkracker**.

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

Van Phan's **Values** is Best Animated Short at SIGGRAPH 2001.

2002

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
Die Another Day
Eight Legged Freaks
Harry Potter and the Chamber of Secrets
Men in Black 2
Minority Report
Panic Room
Reign of Fire
Resident Evil
Scooby-Doo
The Scorpion King
Solaris
Spy Kids 2: Island of Lost Dreams
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.

2002 (cont.)

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.

Selections from Kerlow's "The Art of 3D Computer Animation and Effects"