



Making Movies

Making Movies

Concept

Storyboarding

Sound

Character Development

Layout and look

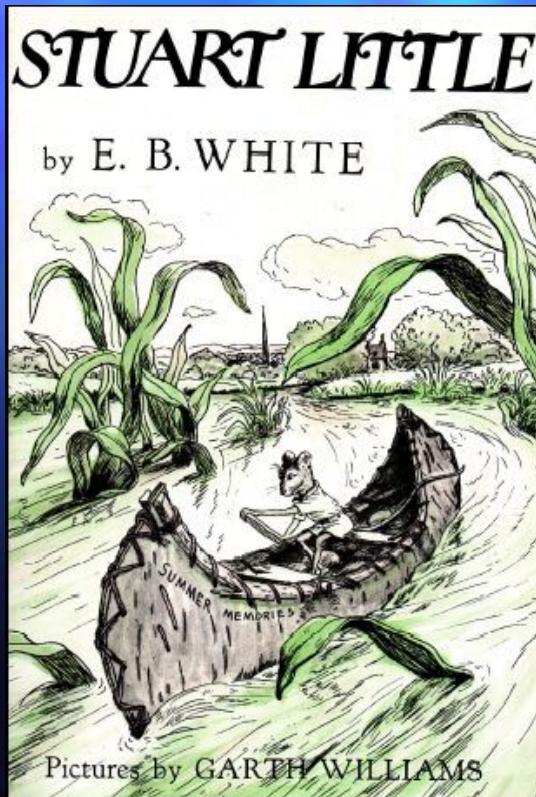
Effects

Animation

Lighting

Concept

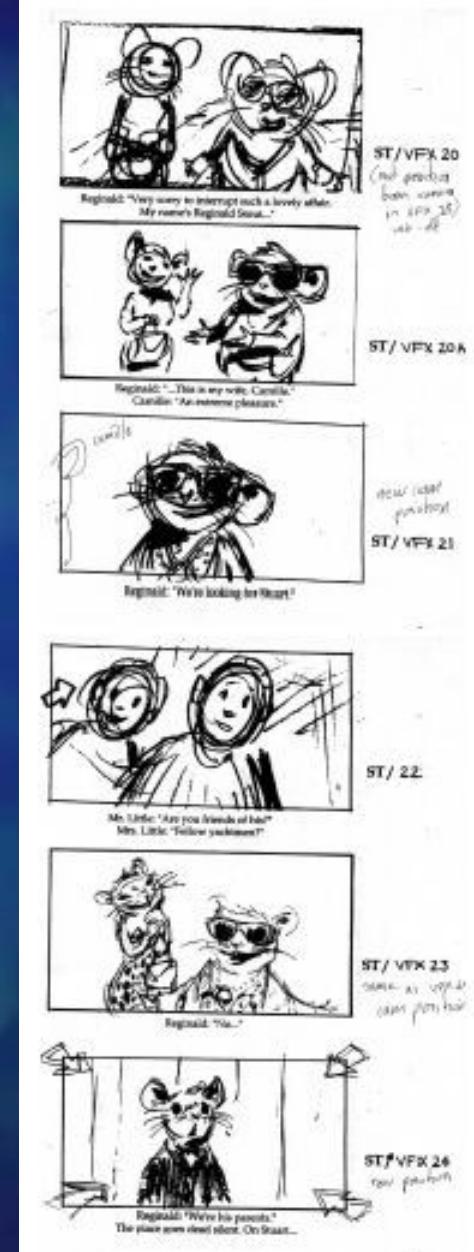
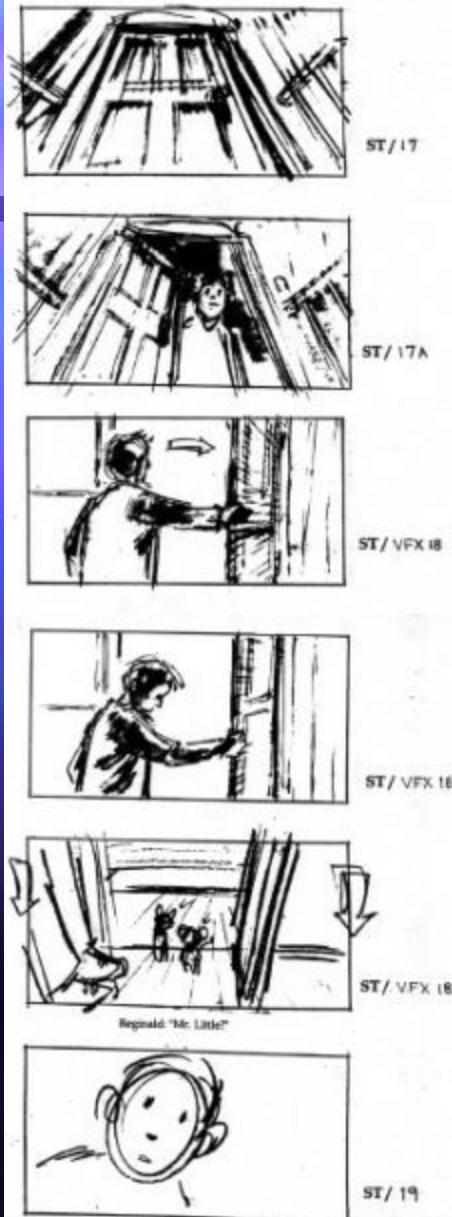
Pixar's Lasseter is a genius – “Nothing gets in the way of the story”



Storyboarding

- Scenes
- Camera shots
- Special effects
- Lighting
- Scale

Used as guide by animators



Sound

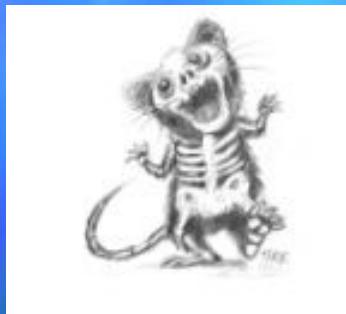
Voice recording of talent completed before animation begins

Animations must match the voice over

A puppeteer once told me that the voice makes or breaks a character

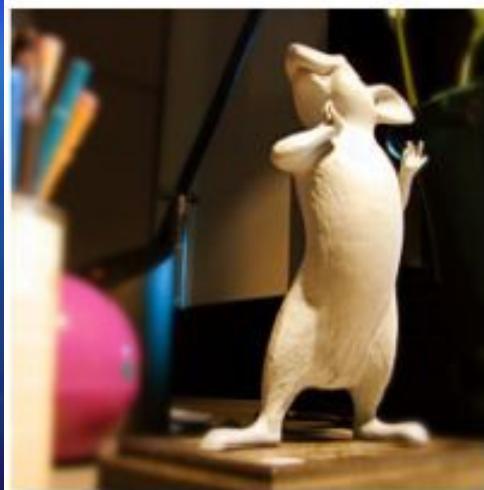
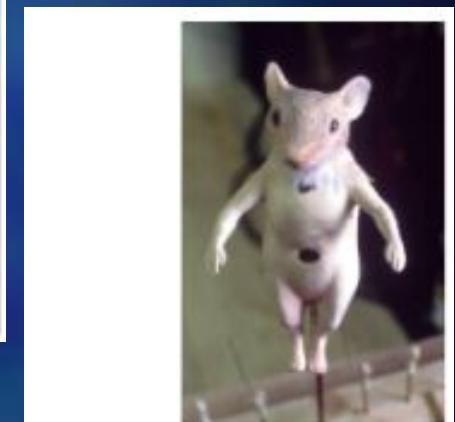
Character Development

300 Drawings



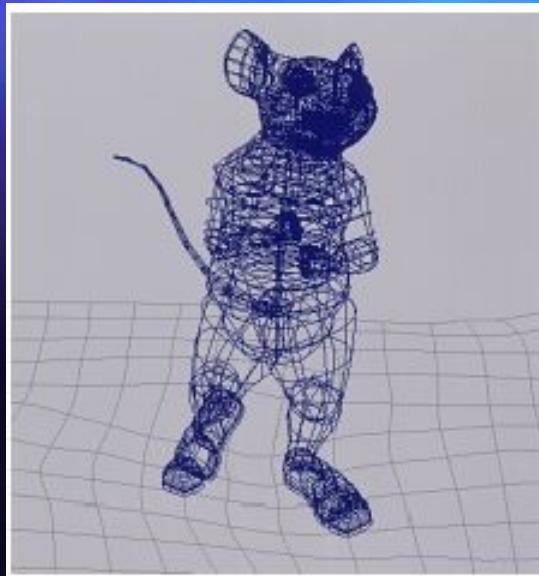
Character Development

40 Sculptures



Character Development

Computer Models



Layout and Look

Build scenery

Match colors



Matchmoving

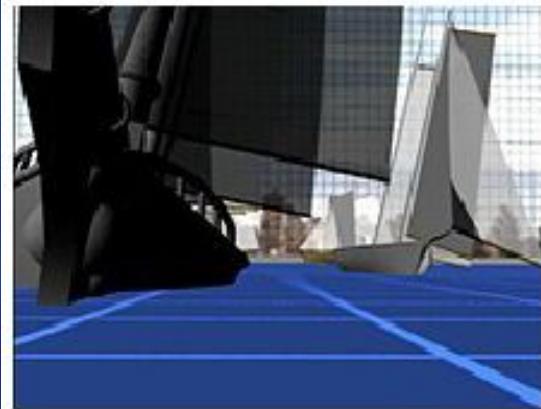
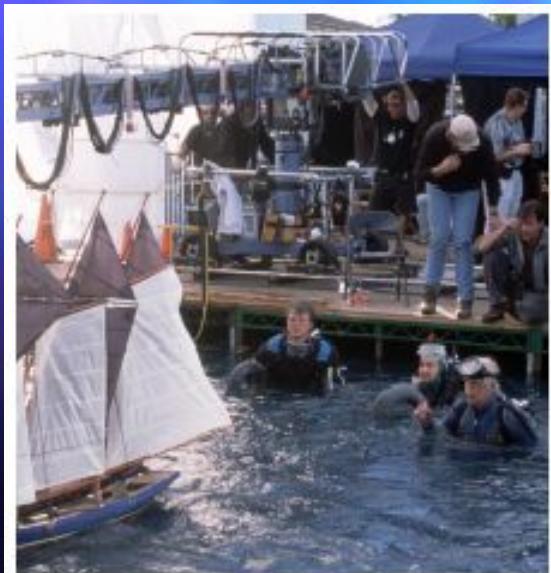
CG camera must exactly match the real camera

- Position
- Rotation
- Focal length
- Aperture

Easy when camera is instrumented

Hard to place CG on moving objects on film

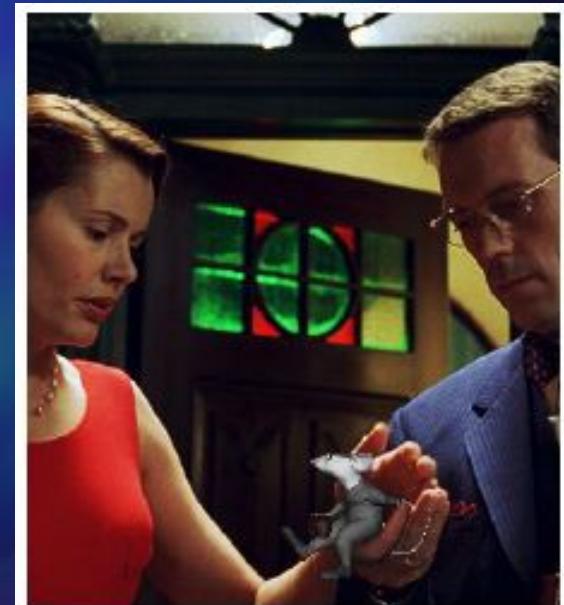
Matchmoving



Matchmoving

Square patterns in live action made it easier to track – furniture, wall paper

2D – 3D conversion in Maya



Water



Particle Sim and Indentation



Tools



Compositing

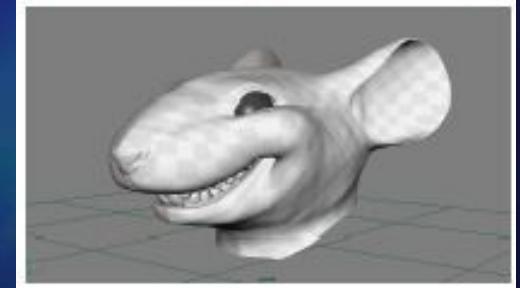
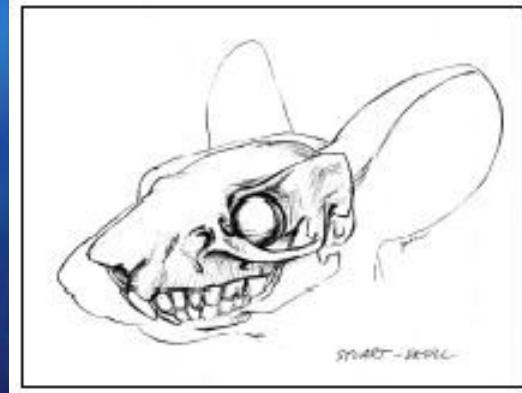
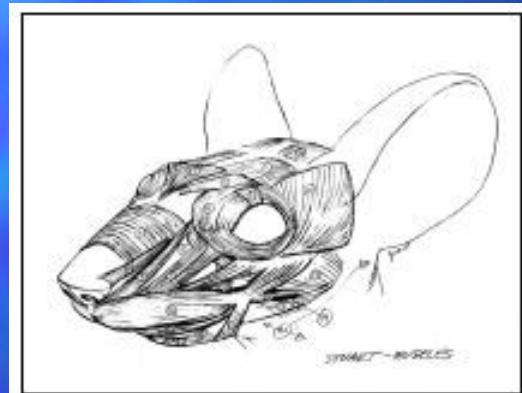


Compositing

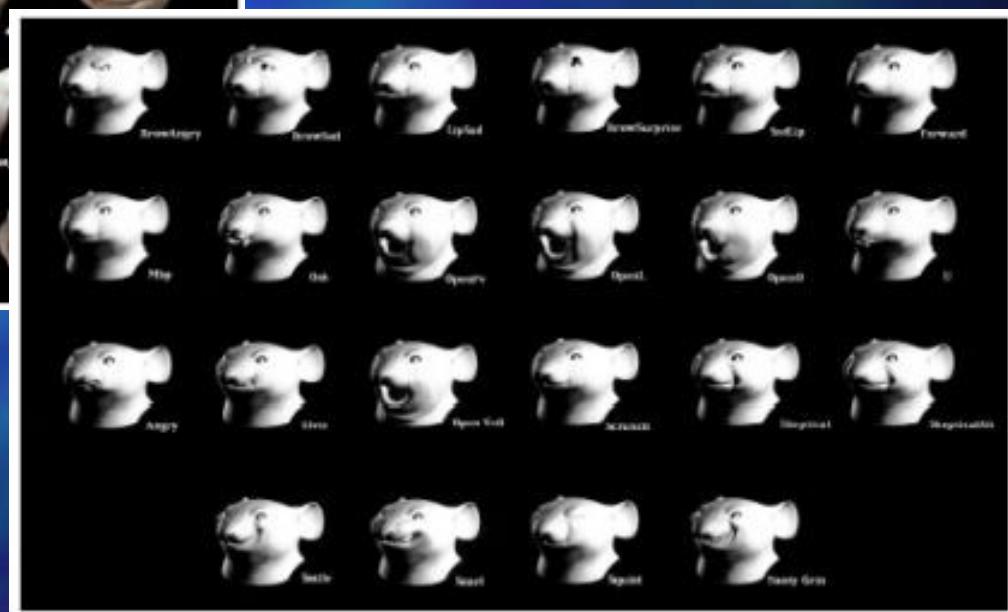
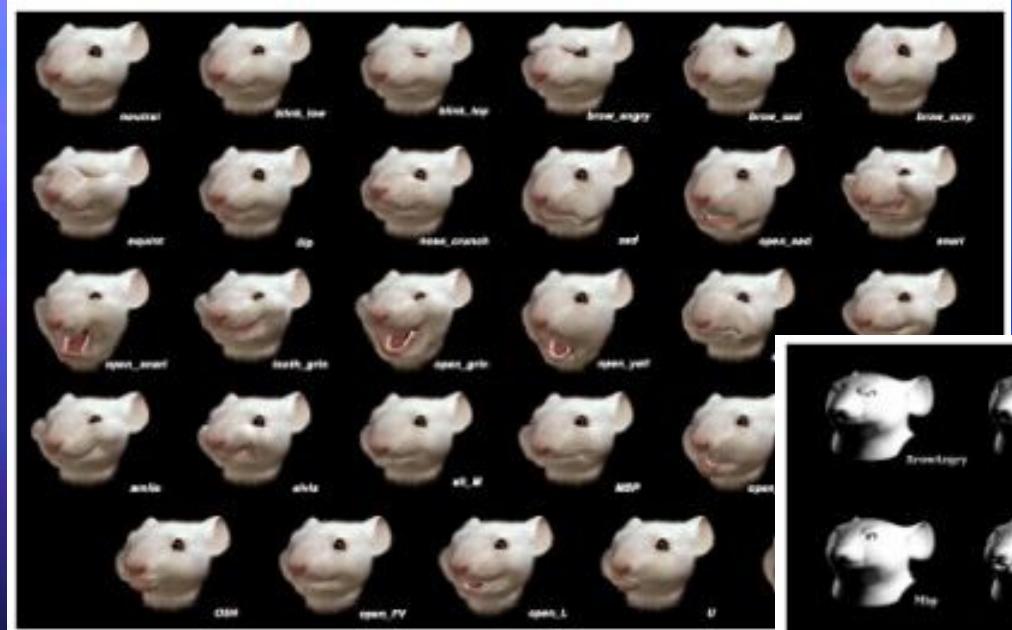
Lighting



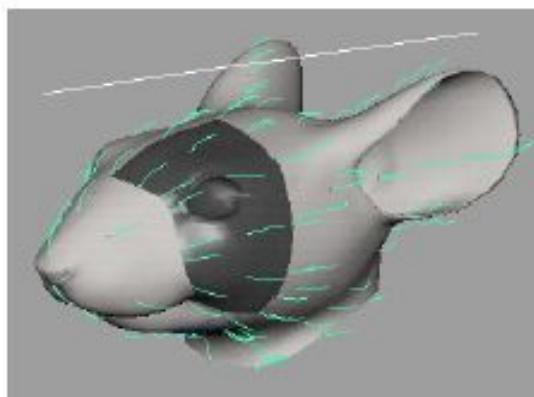
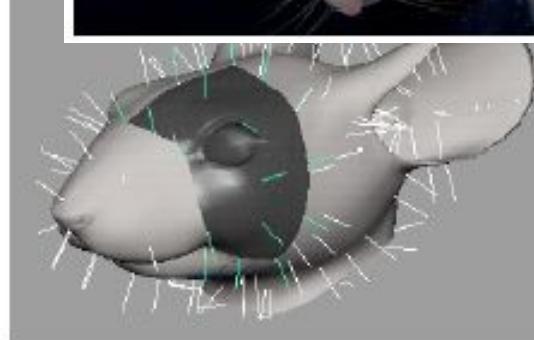
Facial Animation



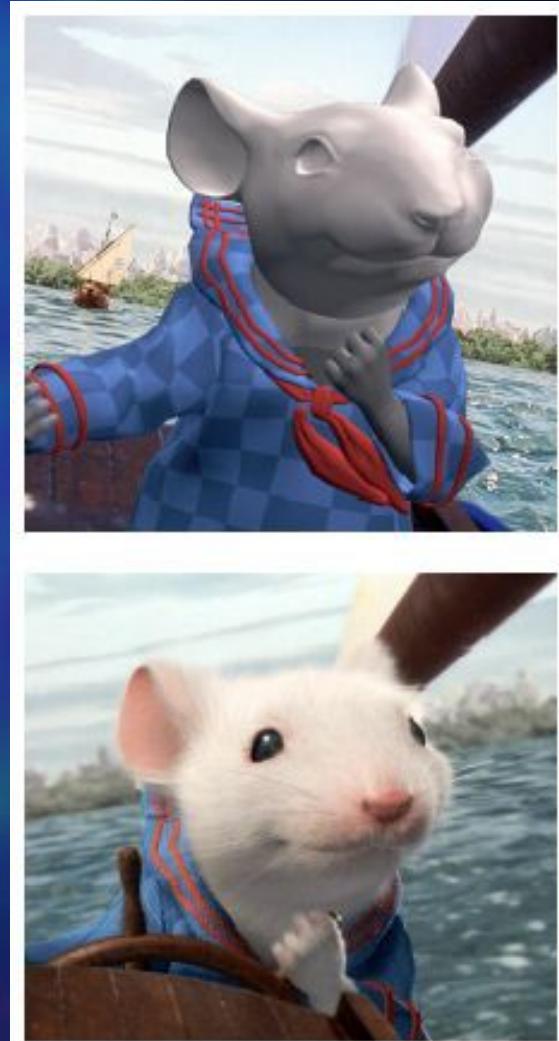
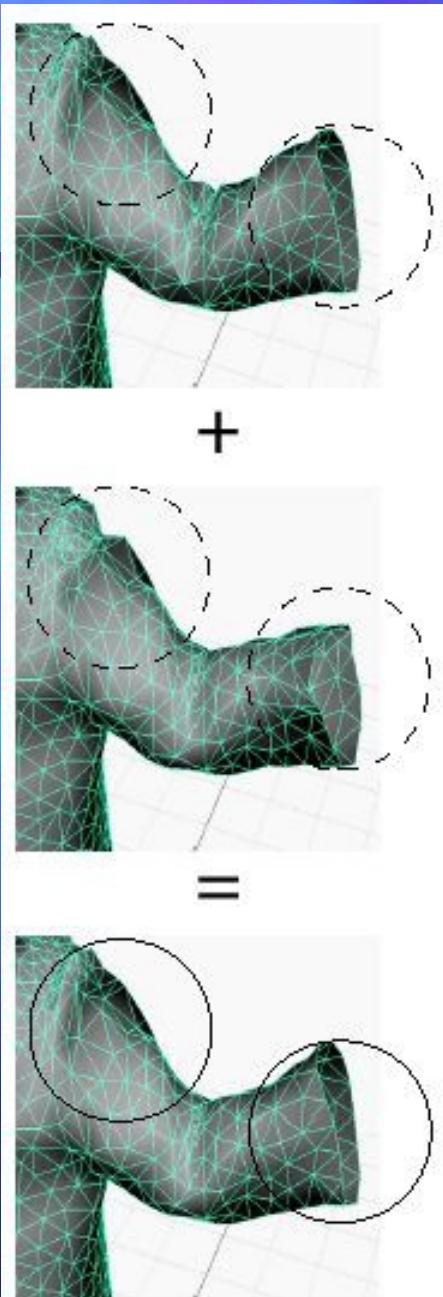
Facial Animation



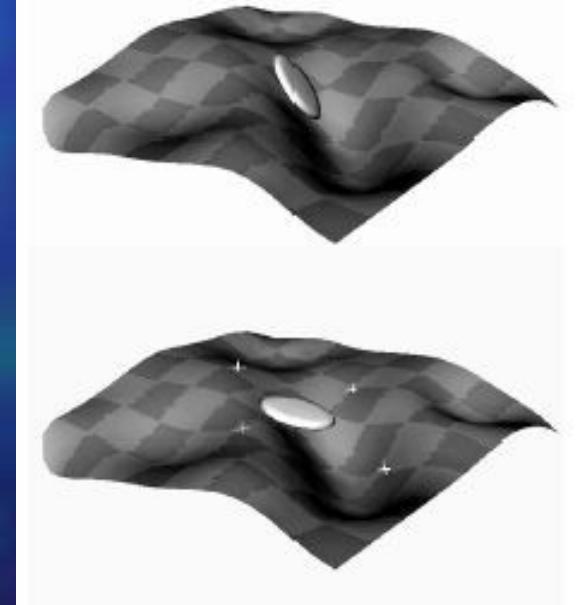
Fur



Cloth



Buttons and Creases



Texture



Companies

Pixar

Disney

Sony Imageworks

Industrial Light and
Magic (ILM)

Rhythm and Hues

Pacific Data Images
(PDI)

Dreamworks SKG

Tippett Studios

Angel Studios

Blue Sky

Robert Abel and
Associates

Giant Studios

Newman!

Subdivision-surfaces

Polygonal hair (head)

- Texture mapped on arms

Sculpted clothes

Complex shaders



Although still a 3D cartoon, Al McWhiggin, toy collector and kidnapper of Woody, looks more human-like than the humans in the first Toy Story.

Devil's in the Details

Render in color

Convert to NTSC B/W

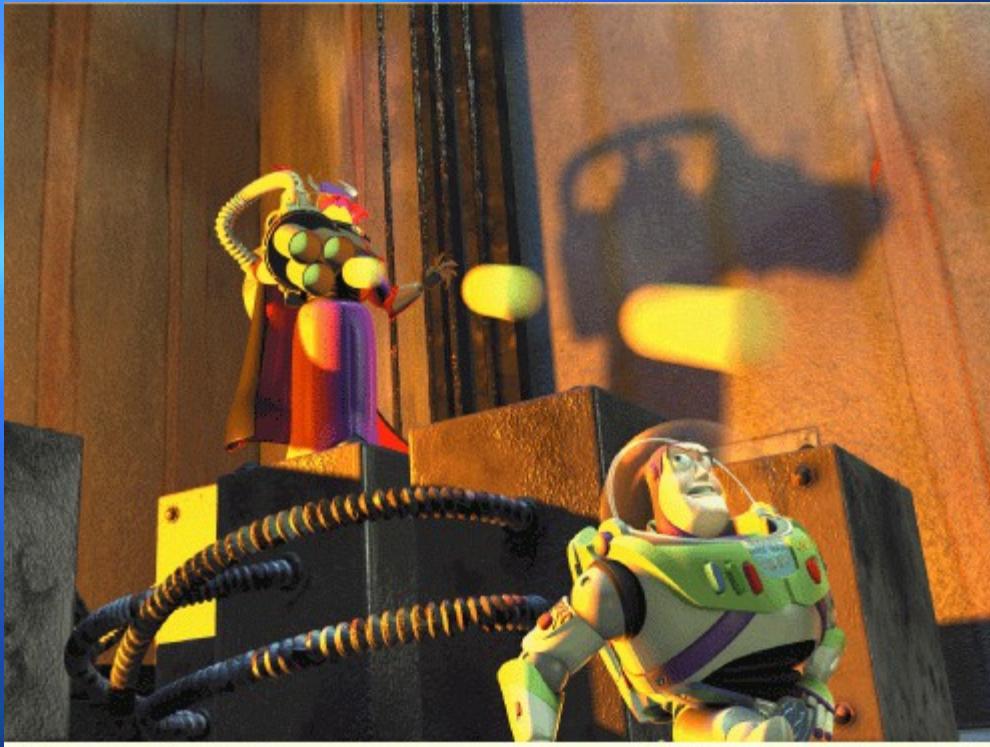
Add film effects

- Jitter
- Negative scratches
- Hair
- Static



To create the light shining on Woody's face and in the room, Pixar emulated the particular color of light emitted from a black-and-white TV set in the '50s.

Images



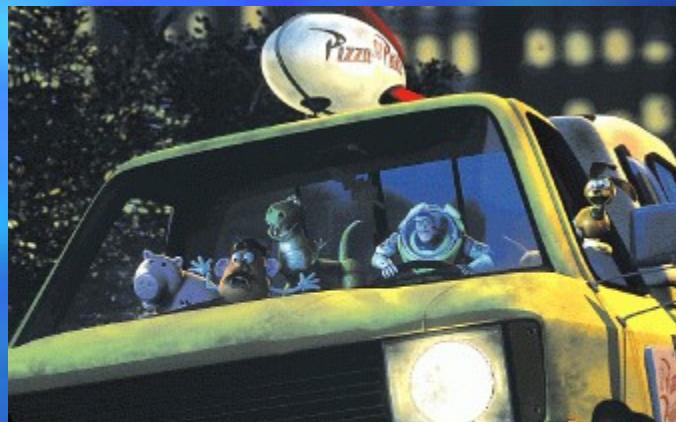
To keep a crisp leading edge on the glowing energy balls being fired at Buzz by his archenemy, the evil Emperor Zurg, the effects team blurred the objects one-half frame backward in time.

Images



If you look closely, you can see yellowed printed material, little scratches, and paint worn off metal surfaces that tell you this collection is old but well-maintained.

Images



Lighting conditions in Toy Story 2 range from bright daylight to nighttime scenes such as this one in which Buzz and the toys race to Woody's rescue in a Pizza Planet truck.

Stuart Little

500 shots with digital character

6 main challenges

- Lip sync
- Match-move (CG to live-action)
- Fur
- Clothes
- Animation tools
- Rendering, lighting, compositing

Stuart Little

100+ people worked on CG

- 32 color/lighting/composite artists
- 12 technical assistants
- 30 animators
- 40 artists
- 12 R&D



Making it possible to drive Stuart Little's performance were hundreds of controls that helped animators and artists manipulate every detail of this digital character, from his whiskers to his five little fingers to the glint in his eye. Stuart's ill-fitting orphan's jacket, for example, was woven thread by thread.

Shooting Film For CG

Actors practice with maquettes

Maquettes replaced with laser dots

- lasers on when camera shutter is closed

After each take, three extra shots

- chrome ball for environment map for Stuart's eyes
- white and gray balls for lighting info

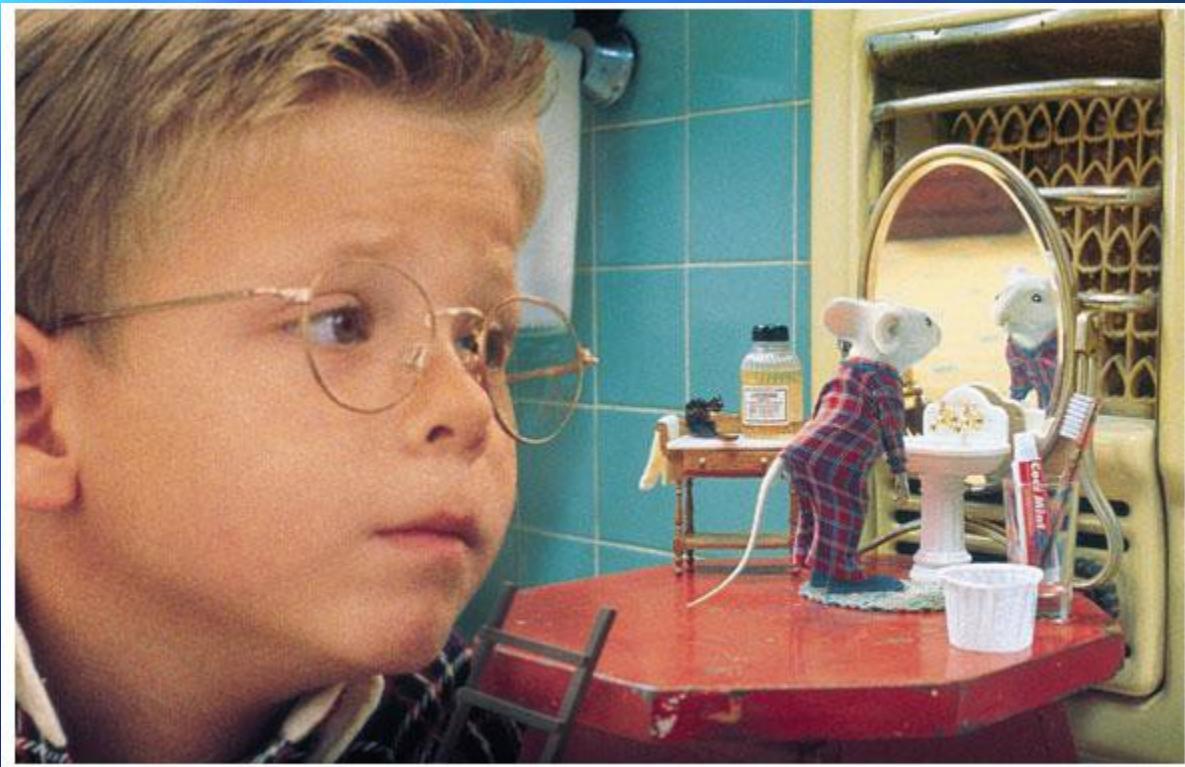
Match-moving

Film scanned

Camera tracking data retrieved

3D Equalizer + Alias Maya to prepare (register)
the digital camera

Once shot is prepared, 2D images rendered and
composed with live action



Although props that Stuart held, such as his toothbrush, were modeled, his vanity is a miniature physical model.

Making Movies

Production Team

Production Line

Special Effects

Production Team

Directors

Modelers

Lighting

Character Animators

Technical Directors

Render Wranglers

Tools Developers

Shader Writers

Effects Animators

Looks Team

Security Officer

Janitor

Lackey