

Visual Effects Demo Reel Breakdown

Transformers: Dark of the Moon

- Building destruction: generic explosions setup, fire, broken glass setup for skyscraper, furniture, paper, and debris.
- Developed eroding rust technique and rendering look
- Water splashes: simulation, rendering and water replacement/blending

Iron Man 2

- Worked with Director producing options for final kill scene effect of two beams colliding. Process included volumetric fire, GPU based fire, smoke and lightning effects. Final effect was "cloud tank" look rendered and simmed on CPU based smoke engine.
- Developed volumetrically rendered non-sim particle setup for use by effects and non-effects TDs for sequence generic drifting smoke and atmosphere which included atmospheric light scattering and character interactions.

Avatar

- Development and creation of full 3D volumetric fire simulations to create fuel based explosions. Rendered using Blackbody Radiation models for fire temperature, simulated with the PhysBAM smoke engine.
- Fire Simulations and Rendering using GPU based fire/smoke systems.

Transformers: Revenge of the Fallen

- GPU and PLS based water simulations for splashes, mist and shallow water. Developed method for rendering procedurally created geometry for pyramid destruction sequence. Developed look for underwater sequence, including lighting, bubble simulation as well as for underwater atmospherics.

Star Trek

- Created automatic particle smoke and debris generation from fracturing Rigid Simulations, as well as snow and debris for the snowy environment, and various smoke, dust and atmosphere as required.

Indiana Jones and the Kingdom of the Crystal Skull

- Crowd simulations of independent agent ants transitioning from running, walking, stopping and "flying" as they were flung from surfaces.

The Spiderwick Chronicles

- Development of various natural phenomena such as leaves, debris and blood using particle and rigid simulations with various rendering techniques including geometry instancing, strings, and sprites.

Pirates of the Caribbean: Dead Man's Chest & Evan Almighty

- Water Simulations using particle levelset solution (Stanford's PhysBAM PLS system) as well as particle solutions for splashes, mist, drips and spray. Generally using a combinations of string based methods for splashes, dense particles for spray and atmospheric mist elements

Poseidon

- Water and Particle simulations. Primarily Using PhysBAM PLS water simulations, but also supplemented with SPH systems and more traditional particle simulations for stringy splashes, thicker denser spray elements and atmospheric misty elements.

Star Wars Episode 3: Revenge of the Sith

- Hair software and look development, specifically shading and efficient rendering of crowds of hairy creatures.

Van Helsing

- Creature lighting, hair look development. Created a pipeline for rendering and rooting hair on changing topology as the creatures tore off their furry skin.