AV1265-L Animation of Autodesk® Inventor® Assemblies Using Autodesk® 3ds Max® Design

Steven Schain
The 3D Professor, LLC - President
Autodesk Inventor software is a great tool for building complex mechanical assemblies, and Autodesk 3ds Max Design software is a great tool for generating visually stunning rendered animations. This hands-on labs fuses the two programs and covers topics related to the animation of Inventor assemblies using 3ds Max 2014. You learn how to import an Inventor assembly that will be used for animation in 3ds Max. You also learn strategies for building a hierarchy based on the animation requirements for the imported models. The class steps you through the process of creating keyframe animation of specific moveable parts. Finally, you learn about the tools that are available for editing keyframes and tweaking the overall look and timing of the animation. To complete the process, you learn how to configure and render an image sequence for final output using the Quicksilver hardware renderer.
Key learning objectives

At the end of this class, you will be able to:

- Import an Inventor model from within 3ds Max Design 2014.
- Create a hierarchical structure that is suitable for animating.
- Animate using keyframe animation and edit the keyframes to modify the animation.
- Render the animated sequence using the Quicksilver hardware renderer.
About the Speaker

- **Trainer / Instructor**
  - Teaching 3ds since 3D Studio DOS Release 3.
  - Autodesk Certified Instructor since 1998.
  - Trainer – The 3D Professor, LLC (3ds Max / Maya / AutoCAD)

- **Author**
  - Autodesk Fundamentals Courseware
  - CAD Learning online 3ds Max courseware
  - Co-developer of Autodesk’s 3ds Max Fundamentals Standards
  - Co-developer of Autodesk Certified Instructor Program
  - www.the3dprofessor.com
At the end of this class, you will be able to:

- Import an Autodesk Inventor® model
- Create a hierarchical structure suitable for animating
- Animate using keyframe animation
- Edit keyframes to control the animation timing
- Render the animated sequence
Import an Inventor model into 3ds Max Design
Importing Autodesk Inventor® Assemblies
Importing Inventor Assemblies

- Type of imported object
  - Body Object
  - Mesh Object
- Assembly Options
  - Duplicate parts
  - Layers
- Merge/Replace
  - Merge with current scene
  - Create new scene
Importing Inventor Assemblies

- Material options
  - Import materials from Inventor
  - Assign sub-object material ID’s
- Mesh resolution
  - Adjust mesh density
- Vertical direction
  - Set X, Y or Z as up
Importing Inventor Assemblies
Create a hierarchical structure for animation
Organizing Objects

- What are the animation needs?
- Methods of scene organization
  - Grouping objects
  - Using Helper objects
Organizing Objects

- Creating the scene hierarchy
  - Developing parent / child relationships
Creating keyframes to Animate the Assembly
Animation Setup

- Setting animation options
  - Frame Rate
  - Length
Creating Keyframes

- Animating the Helper objects
  - Setting Keyframes
- Turning the Propellers
  - Creating rotation animation
Edit keyframes to control the animation timing
Editing Keyframes

- Using the Curve Editor
- Adjusting the Propeller
  - Work in time and space
  - Retime motion keyframes
Editing Keyframes

- Modify Propeller animation
  - Out of Range curve for continuous rotation
Rendering with the Quicksilver Hardware Renderer
Configure the Rendered Environment

- Setting up an environment
  - Adding a Floor
  - Configuring lighting
  - Add a camera
- Use a preset scene
- Adjust Exposure control
- Do you want to change the materials?
  - Reuse Autodesk Inventor® materials
Quicksilver Hardware Renderer Configuration

- Rendered image size
- Set the sequence length
- Configure Quicksilver parameters
  - Number of iterations
  - Visual Style and Appearance
- Render the scene
Thank You

Steven Schain
Steve@sli-3d.com
www.the3dprofessor.com