

3D Animation & Saving Fly-throughs as .avi Files

Overview:

ArcScene fly-through allows the user to virtually “fly through” scenes to get a birds eye view of the landscape. Using datasets that contain a z-value (height dimension), planar datasets can be draped to make the scene mimic real-world topography. Vertical exaggerations can be made to emphasize relief in scenes. ArcScene also allows the user to save a recorded animation as a .avi file that can then be posted on a webpage (See Intro to ArcScene write-up at J:\saldata\ege0451\W04\index.html for general information on ArcScene).

The fly-through feature could be used in areas such as planning, developing, advertising, resource extraction. It is useful because it can help the user to see things from a different perspective. Programmers can use this to show an audience a new perspective or a “vision” they have that might not be able to be communicated via a flat or simple 3D map.

Key Words:

ArcScene, fly-through, .avi file, base height, animation, z-unit

Methods:


To do a fly-through:

Open your DEM file

Turn on 3D and Animation toolbars in ArcScene:

Open ArcScene → *Tools* → *Extensions* → Check *3D Analyst*

Then go to *View* → *Toolbars* → select *3D View Tools* and *Animation*

Click fly-through button on the 3D Analyst toolbar: 

How to use this feature:

Increase speed: mouse left click

Decrease speed: mouse right click

Right: move mouse right

Left: move mouse left

Forward: while stopped, left click


Backward: while stopped, right click

Gain/lose altitude: move mouse up/down

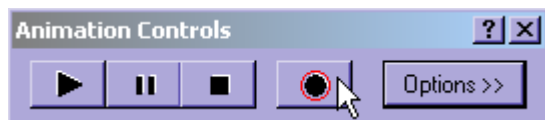
Maintain altitude while peering up/down, and changing direction: hold shift key & move mouse

To record:

Zoom on your image to the place you want to start the recording.

On the Animation toolbar, click the record button: 

This toolbar will open:



To record, simply click the *record* button (shown in image) then move your cursor to follow the path you would like to record. If you would like to change settings such as duration, whether it loops forward or backward, or if you want it to play only a portion of your recording, click *options* to change your settings.

To view your recording, click the *play* button.

To have your fly-through follow a pre-specified path:

To create a path from a pre-existing shapefile

In ArcMap open your DEM

Add the shapefile or layer you want to use as your path

To select one feature from a pre-existing layer file (ie. a street or a river)

Selection → *Select by Attributes* → complete your query

Then right click the layer with the selection → *Selection* → *Create Layer from Selected Features*

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This will isolate your selection as its own layer.

Set base heights to match your DEM and save the layer.

OR to create a new path:

Open ArcMap and your DEM (to use as a reference).

Click Enhanced Create Shapefile function:



Browse to your storage location and create your shapefile name.

Choose whether your shapefile will be a point, line, or polygon (most likely a line).

Click projection button to set projection. Set it to match the projection of your DEM.

Click OK.

Set base heights to match your DEM.

View → Toolbars → Editor

Start edit session, select your shapefile, and create a new feature.

Use tools to edit your shapefile:



Save edits and close your edit session when you're finished.

Open ArcScene


Open your DEM and the layer or shapefile you're going to use as your path.

Turn on 3D and Animation toolbars in ArcScene:

Open ArcScene → *Tools → Extensions → Check 3D Analyst*

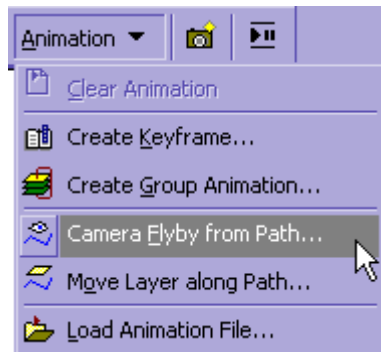
Then go to *View → Toolbars → select 3D View Tools and Animation*

****IMPORTANT!** You must select your layer in order for the following option to work.

You can do this either by using this button  **or** by doing *Selection → Select by Attributes* **or** right click the layer and choose *Select All*

In the *Animation* dropdown menu choose *Camera Flyby from Path...*

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Choose *Selected line feature*.

Set your *Vertical offset* (height above the line you want your camera to fly).

Adjust the *Simplification factor* according to how strictly you want the camera to follow your path.

Set your *Path destination*. (optional)

Click *Orientation settings* button to change other settings (optional).

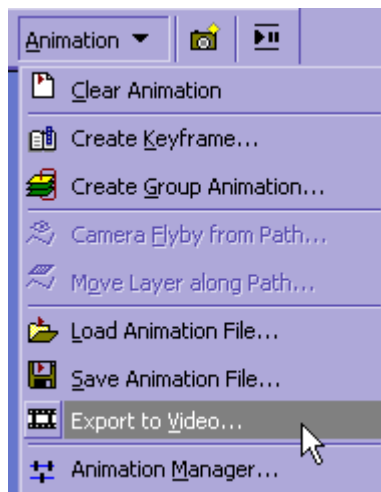
Click *Import*.

To view your fly-through, click the *play* button on the *Animation Controls* bar.

To save your recording as a .avi file:

Close the *Animation Controls* bar.

To save your recording as a .avi file, select *Export to Video* from the *Animation* drop-down list:



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Choose your storage location and name your file something meaningful.

****NOTE:** These files tend to be very large so be sure your storage location has a lot of room available. It will most likely be necessary to reduce your window size before saving this file.

ArcScene will play your video again as it exports.

To post your .avi file on your website:

Open Microsoft FrontPage.

Create necessary new pages and hyperlinks to these pages.

To post your .avi file on a page:

Click *Insert* → *Picture* → *Video*

Right click on picture → *Picture Properties* → choose *Video tab*

Video source should already be selected, but you can browse to change it if you'd like.

Under *Start*, click *On file open* to have the video start when the window opens. Click *On mouse over* to have the video start when the user places the mouse cursor on the image.

Under *Repeat*, you can set the number of times you would like the video to loop, or check the box next to *Forever* if you want it to continuously loop.

Click *OK*.

Post your new page to your website using Secure Shell as usual.

Locations for Additional Help:

ArcScene Help.

Intro to ArcScene write-up (J:\saldata\ege0451\W04\index.html): Mike's write-up 3D analyst and on general ArcScene procedures.

ESRI Support Center (<http://support.esri.com>): A forum where you can ask ArcGIS related questions or search old questions that have been asked.