

IPackThat

The main purpose of this tool is to pack an existing unwrapped UV-Layout. All existing overlaps inside an imported UV-Layout will be treated as such. If overlaps are not wanted, try to solve this inside the used 3D Tool.

The Tool is able to read Alias Wavefront Obj, FBX, Collada DAE, AutoCAD DXF and Autodesk Studio 3DS files. Saveable fileformats are Alias Wavefront Obj, FBX and Collada DAE.

Alias Wavefront files can only be written if the imported file was Alias Wavefront as well. As a matter of fact, FBX SDK can read and write Alias Wavefront files as well but produced plenty of errors (Smoothing groups or normals are wiped or broken, UV Layout gets splitted on every polygon)

To get around this problems, IpackThat uses an own method of loading and saving Alias Wavefront files. IpackThat is also able to load and pack different UV Channels individually.

General UI

Nearly all of the UI Elements in this tool will provide a tooltip with some notes while hovering over the UI Element.

Updates and Patches will be handled inside the Tool. When the tool starts, it will check for a newer version and will update automatically after asking for update.

<i>Lightning Symbol</i>	Check for updates (and update on user input)
<i>Switch Language</i>	Switch language to selected language (new languages can be added via LanguageDefinitions.xml)
<i>Question Symbol</i>	Show Legal, Disclaimer & Credits
<i>Load</i>	Import UV-Layout from file
<i>Save</i>	Save UV-Layout to file
<i>Reload</i>	Reload last loaded UV-Layout
<i>Save Comparsion Image</i>	Save a comparison image showing the original and resulting layouts
<i>Save Global Settings</i>	Save global scene settings (Resolution, packing settings etc.)
<i>Save Mesh Settings</i>	Save scene settings for the current mesh Including Cluster properties, resolution settings, and packing settings Individual per UV Channel
<i>Paper Symbol</i>	Show Version History Log

Keyboard and Mouse

CTRL + A	Select all
CTRL + I	Invert Selection
Z	Redraw and Recenter View
LMB	Select UV-Shell (Cluster)
LMB + Mousemove	Selection Area
CTRL + LMB	Deselect/Select multiple UV-Shells (Cluster)
ALT + LMB + Mousemove	Deselect Area
MMB	Pan Workarea
RMB	Context Menu
Mouse Wheel	Zoom In/Out
ESC	Stops the current packing process and setting the Working Set to the best solution found
Page Up	goto original uv-layout
Page Down	goto best valid found solution
Space	Pause/Resume packing

General Tab

View Options

<i>Draw Wire</i>	Toggle Wireframe On/Off
<i>Draw Bounds</i>	Toggle Bounding Box On/Off
<i>Fill Polygons</i>	Toggle Polygon Color Filling On/Off
<i>Draw Convex Hull</i>	Toggle Convex Hull On/Off
<i>Draw Margins</i>	Toggle Margins On/Off
<i>Draw Contour</i>	Toggle Contour On/Off – Outline in thick red line – Holes in dotted red line
<i>Draw Import</i>	visualize obj import
<i>Draw Packing</i>	visualize packing process

Scene Options

<i>Resolution Width</i>	Texture width in Pixels (if changed marked in red)
<i>Aspect Ratio</i>	ratio of width and heigth • only height can be changed right now and only 1 and 2 are valid
<i>Stretch</i>	stretch current workarea to new aspect heigth ratio
<i>Apply Scaling</i>	applies the new resolution and ratio settings to the UV-Shells (Cluster)
<<	goto original uv-layout
>>	goto best valid found solution

Scene Stats

Shows current stats of the current visible working set.

Used Area and Wasted Area are presented in two numbers. The first number shows the % area with margin and the second without margin.

Refresh Redraw and Recenter View

Packing

<i>Margin Size</i>	Margin size in pixels (minimum distance of each UV-Shell to other UV-Shells)
<i>Border Margin Size</i>	Border margin size in pixels around the workingarea
<i>Step Size</i>	Lower values will result in longer search times but are more accurate
<i>Maximum Used Threads</i>	Sets the maximum parallel operations when packing. The default value is amount of current available cores – 1. The number is also capped between 1 and 8. The number can be raised manually with higher or lower number. Be aware that too high number will result in performance loss (Memory Bus is limited).
<i>Rotate</i>	Toggles global Rotation of UV-Shells (Clusters) On/Off
<i>Mutate</i>	use Evolution algorithm for every 10 Solution tries (Sort Order)
<i>Pack</i>	starts the compression with the Original Workingset. The best Solution will always be visualized. (inside Demo the saving is disabled else he would always save every found best solution)

Cluster Settings Tab

Transformation

User Transformation of selected UV-Shells (Clusters)

<i>Move Steps</i>	move size in pixels
<i>Rotation Steps</i>	angle in degree
<i>Scale Steps</i>	scale in percentage

Cluster Properties

Cluster Propertysettings for selected UV-Shells(Cluster).

<i>Is Rectangle</i>	Cluster will be treated as Rectangular and can only rotate from 0° to 180° else from 0° to 360°
<i>Can Rotate</i>	Cluster can be rotated or not.
<i>Rotation Steps</i>	rotation increment for selected UV-Shell (Cluster) Example: 90° Compress will test 0°, 90°, 180° and 270° 45° Compress will test 0°, 45°, 90°, 135° etc pp.

Context Menu (Viewport)

Inside the 2D Viewport you can do operation via Context Menu (Right Mouseclick).
Here you can do different operation on current selected clusters or basic cluster operations.

Apply Properties applies the current changed cluster properties and leave selection intact

Selection

All select all clusters
Invert inverts the current cluster selection
Clear clears the cluster selection
Select by Group select clusters based on group id

Properties

Find Smallest Bounds The clusters will be rotated to find the angle where the bounds are smallest
Is Rectangle The clusters will be treated as rectangles and only rotate in an hemisphere (0° to 180°)
Can Rotate The clusters are able to rotate

Groups

Add to New Group adds selection to a new Group
(Group ID will be appended to maximal available Group ID)
Add to Existing Group adds selection to an existing Group
Clear Group clears group of current selection

Colors

Set Color sets fill color of current selection
Reset Color reset fill color of current selection and set to default

Merge Clusters Highly Experimental!!!
This will merge the current selection to a new cluster.
This is used if the selected clusters should stay together as they are (PrePacked outside the tool)

Apply File Cluster Settings Will restore ALL settings (groups, cluster properties etc) from the saved Meshfile Settings.
If the mesh has changed this option wont work anymore