

Rohan Eldo - Maya Python Scripting Portfolio

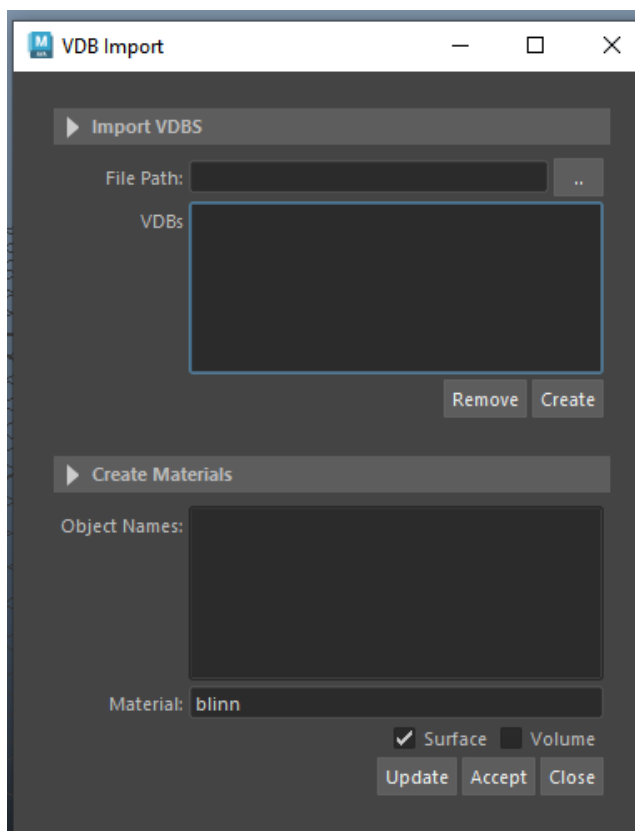
VDB Importer

Problem it Solves:

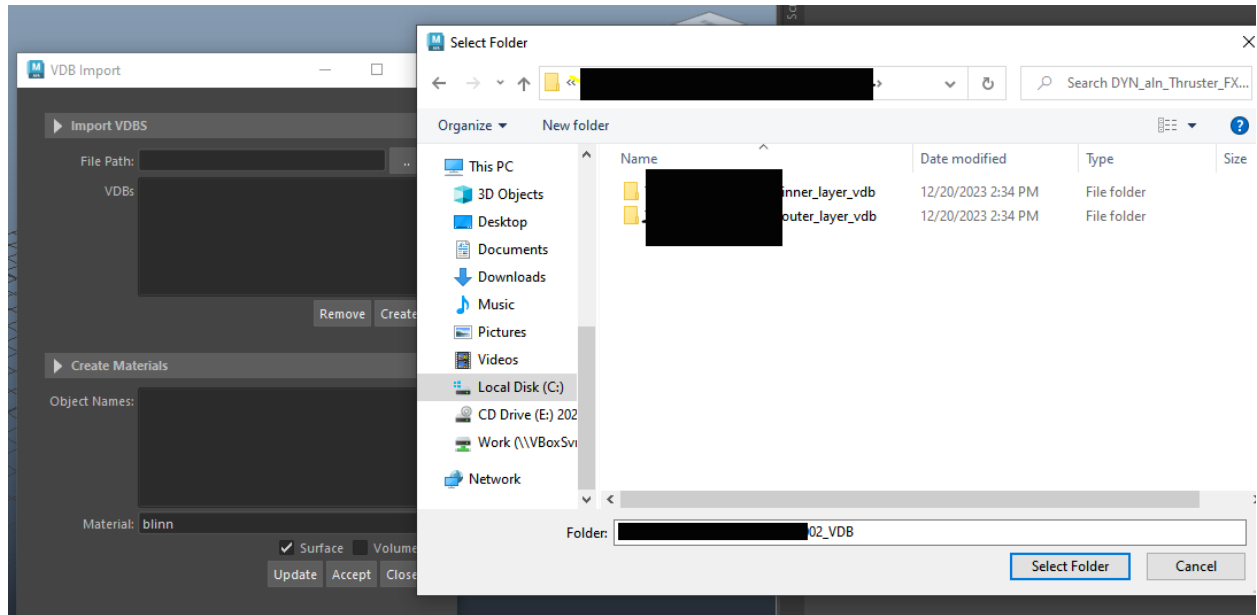
Manually importing smoke VDBs with multiple version names is a time-consuming process. It requires the user to create an aiVolume, select the file path, and set the vel field if it exists. Additionally, creating the shader involves manually creating a material and connecting it to a shader's volume_out in the Hypershade. If there are multiple separate smoke/pyro simulations, the user needs to manually redo each step, which is inefficient.

Solution:

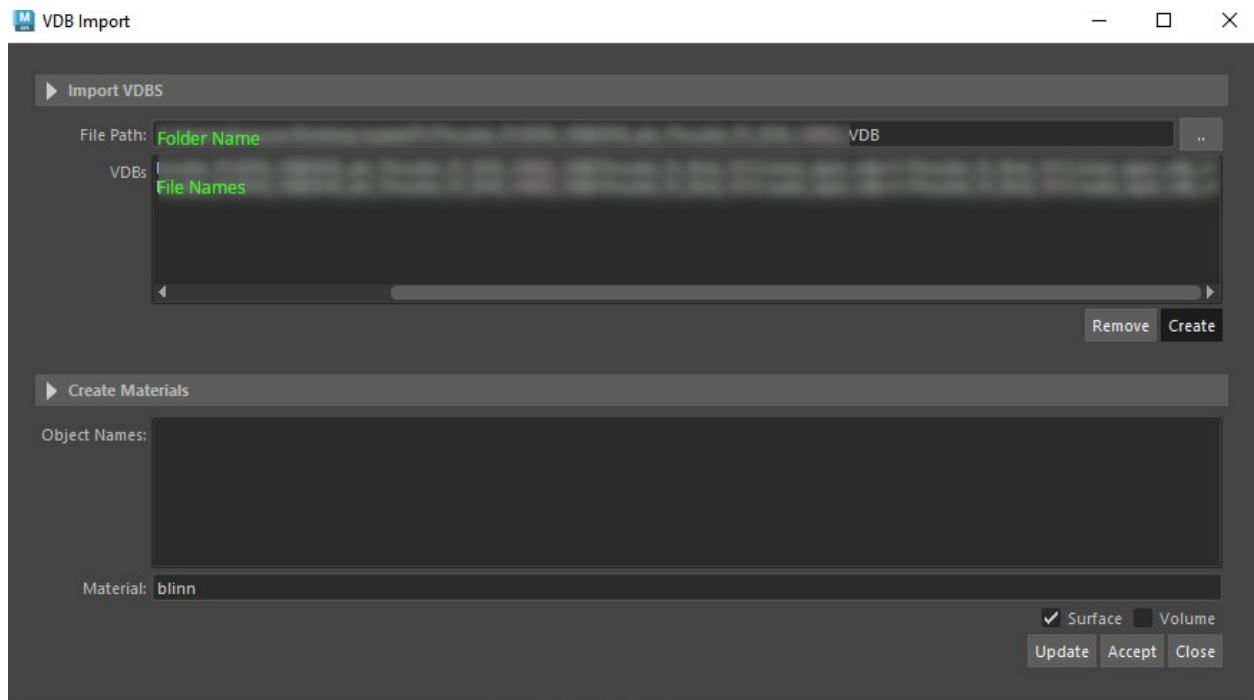
The tool simplifies the process by allowing the user to input a directory. It then scans through the subfolders, identifies files with similar names (except for the last 8 digits), and adds the first frame to a list. Subsequently, it automatically creates an aiVolume, sets the file path, generates a material based on the volume's name, and applies it to the aiVolume. Additionally, the tool provides functionality to select objects and create a new shader for each one with the same name.



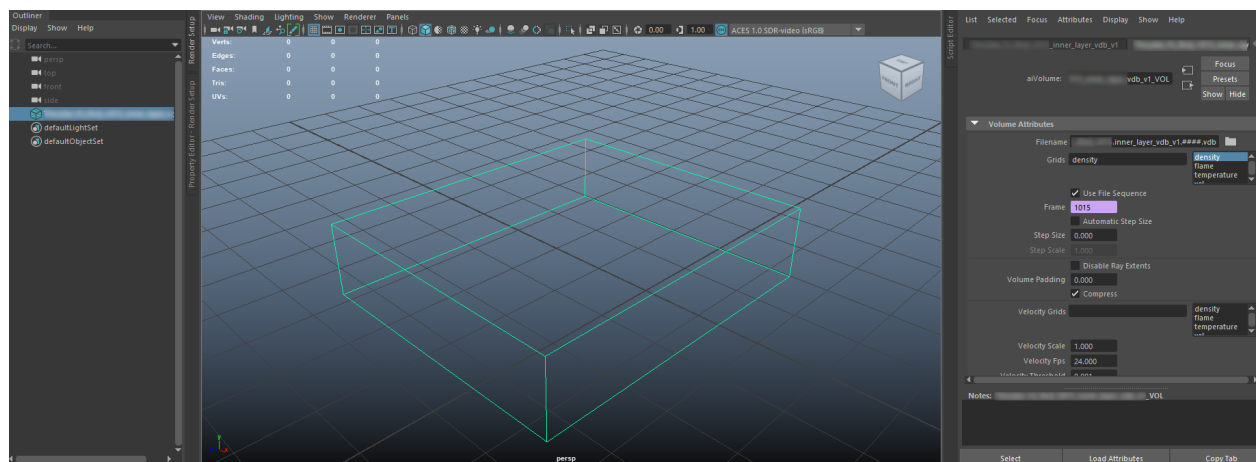
The Tool's UI



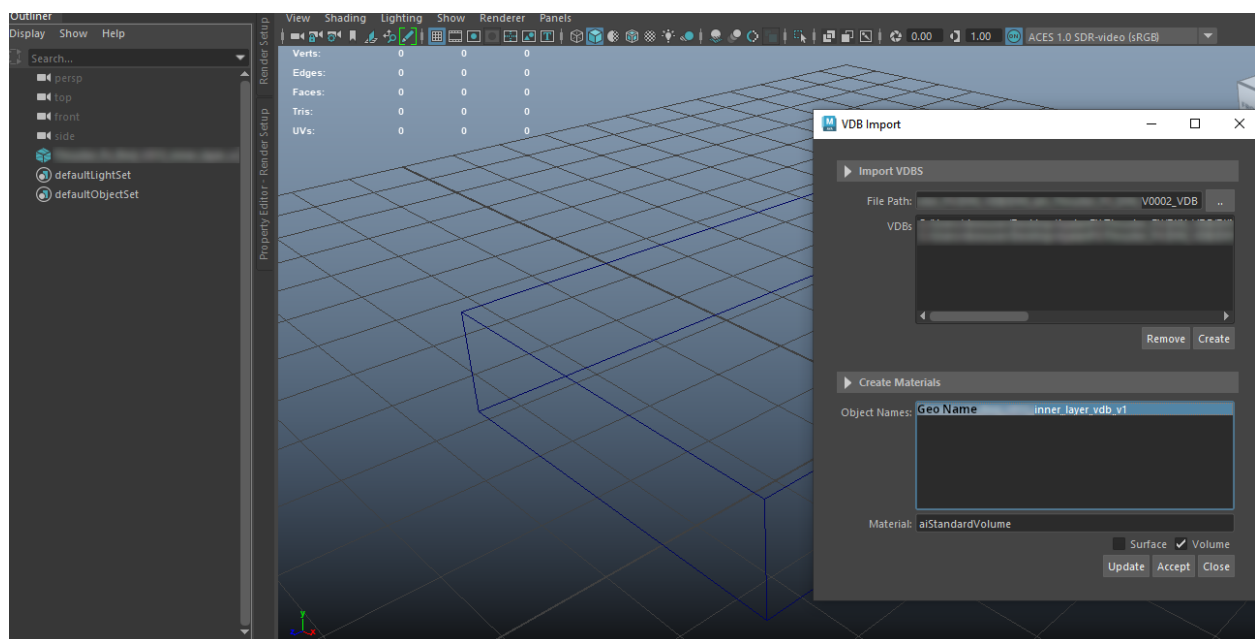
Pressing the “...” button opens a file dialog. The user needs to select a folder that contains subfolders that contain the vdb sequences. Selecting them creates texts inside the listwidget according to the name of the files in the folder.



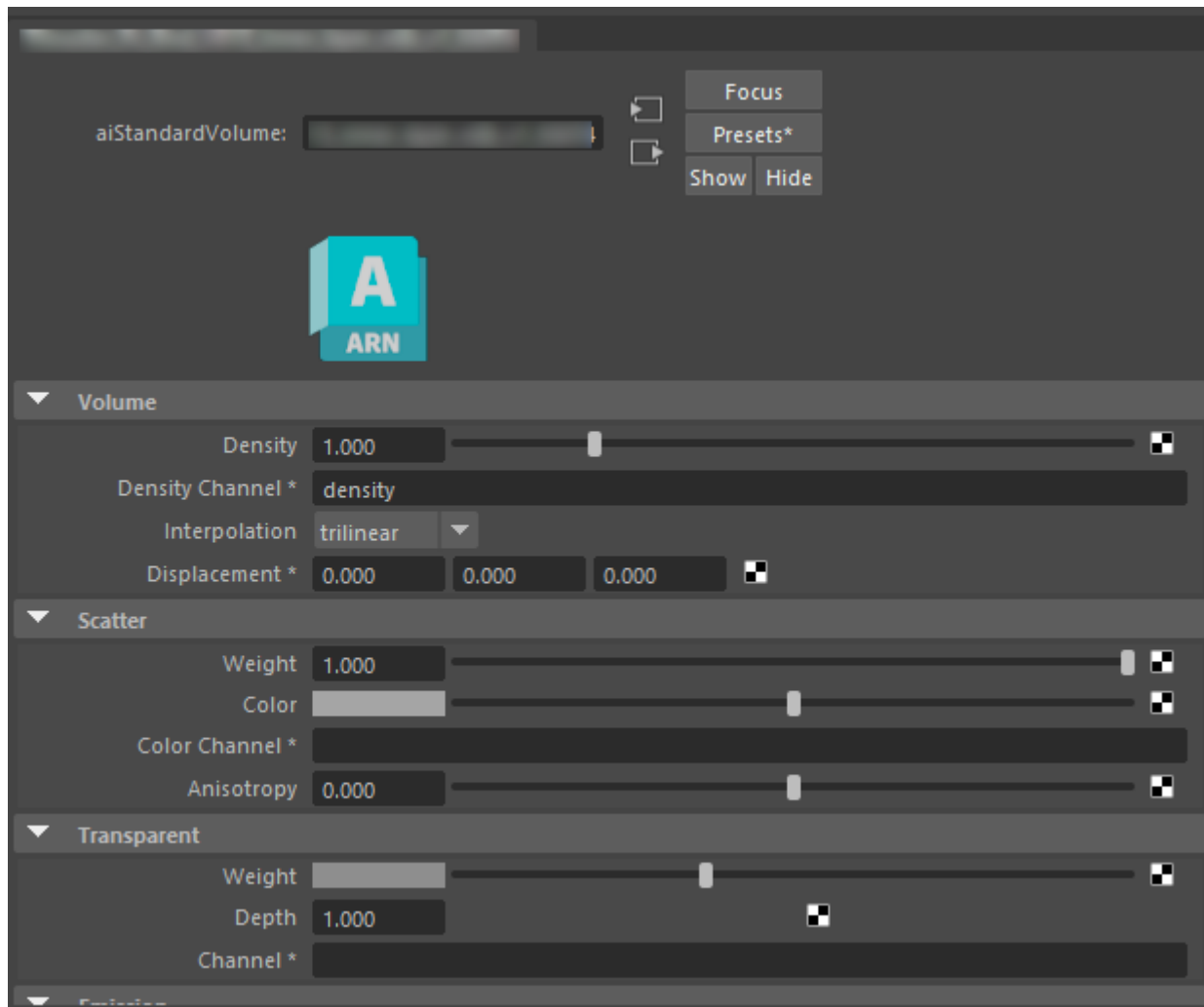
Pressing the create button creates the geometries in the list widget.



After creating the aiVolume, it connects the filepath, uses file sequence and connects the density grids.



Selecting a geometry in the viewport or maya outliner and pressing the update button updates the object name list widget. The user can type the material type in the material line edit and select whether a material needs to be connected to the shader's surface and / or volume.



Pressing the accept button creates materials for the geometries in the object list widget and makes the needed connections.

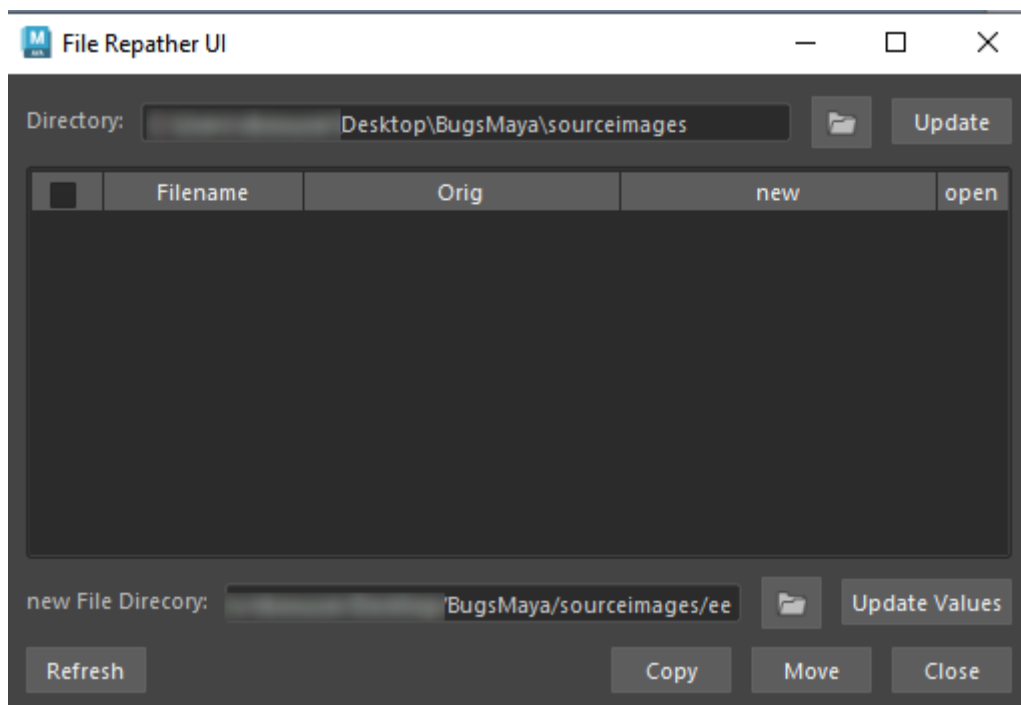
File Repather

Problem it Solves:

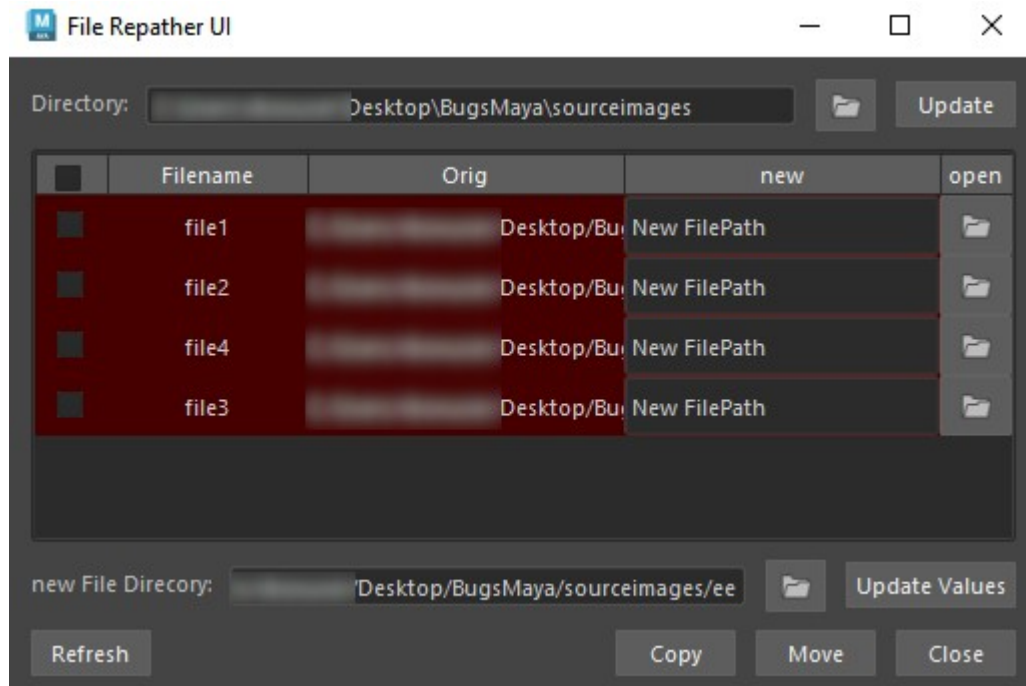
When collaborating on freelance projects with individuals using different folder structures, inconsistent file paths can lead to issues when transferring projects between computers. The default file path editor in Maya only changes the path in the file node, making it incompatible with other systems. This necessitates manual effort to locate missing files and copy them.

Solution:

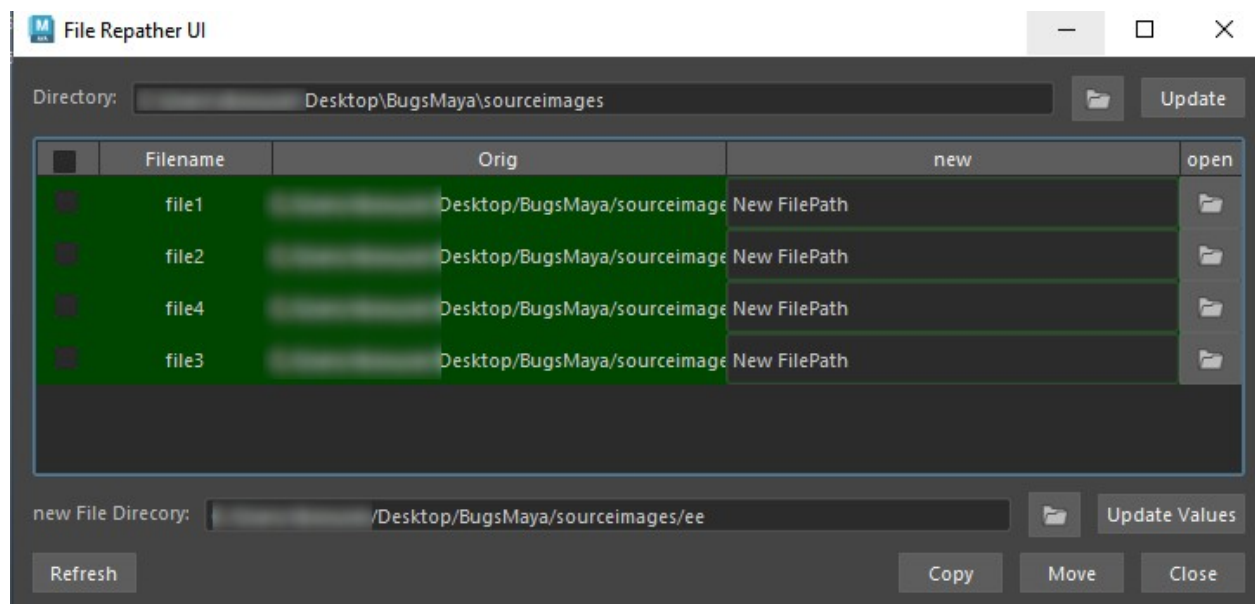
The tool features a table displaying file_node_name, original file path, new file path, a button to open the file directory, and a checkbox to select files for repathing. It refreshes automatically when the window is shown or the refresh button is pressed. Upon setting the directory, clicking the update button finds filenames in the directory or its subfolders and sets the node's filepath attribute to the new found filepath. Users can set the new file directory using the line edit and buttons for copying or moving files.



UI of the tool.



Pressing refresh updates the list with all file nodes whose filepath attribute points to a non existent filepath.



By pressing the folder button, it opens a folder dialog and a folder can be selected. This folder path is updated in the directory line edit. Pressing the update button updates the file nodes filepaths with files with the same filename found in this the folder or its subdirectories.

New File Directory Line edit is where the user can set a folder where they want those files to be copied

to or moved to. Once it is set either through the line edit or the folder dialog, the update button can be pressed which will update the new filepath of each node. Once the files are checked, the files can be copied or moved by pressing the appropriate button.

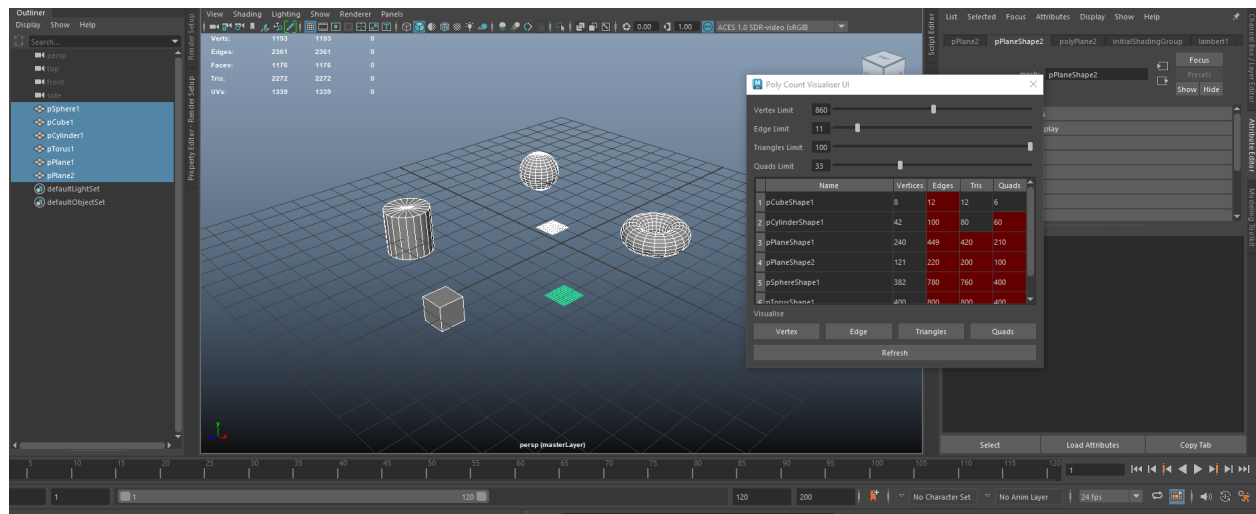
Polycount Visualizer

Problem:

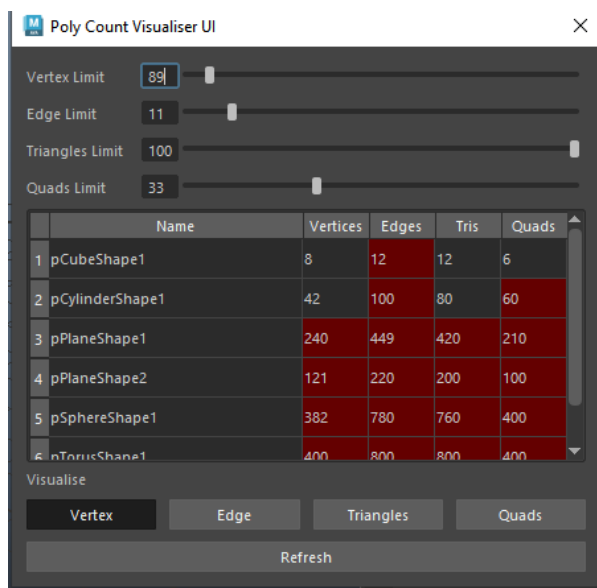
It's challenging to visually identify individual geometries exceeding certain poly count limits.

Solution:

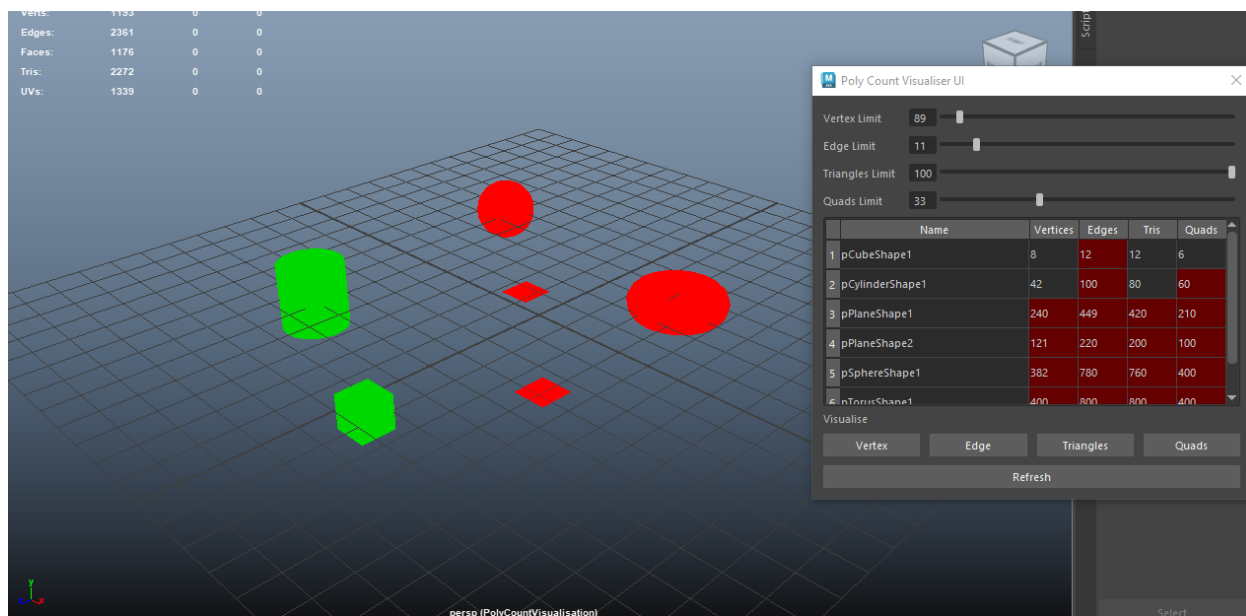
The tool provides intSliderGrps to set limits for vertices, quads, edges, and triangles. It displays every geometry and its polycounts in a table where cells turn red if they exceed the limit. Users can visualize whether geometries are over or under the limit using temporary render layers, which are deleted upon closing the window. IntSliderGrps are maya cmds while the rest of the UI is PySide2.



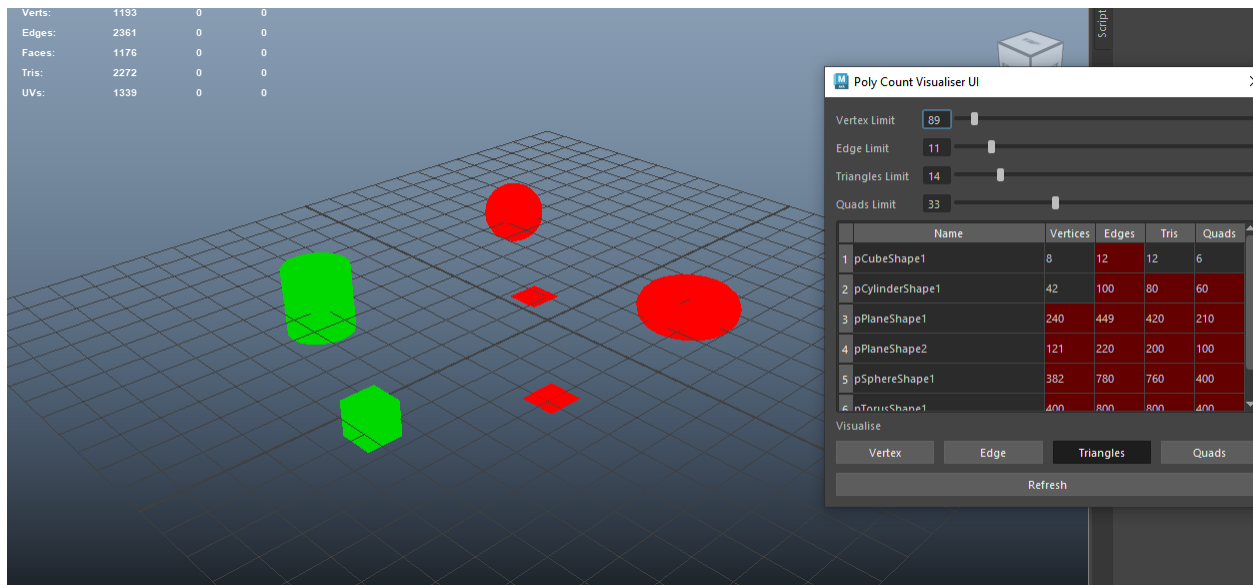
The UI of the tool. The boxes in red are the geometries' poly-counts that surpass the limit specified above in the intSliderGrps.



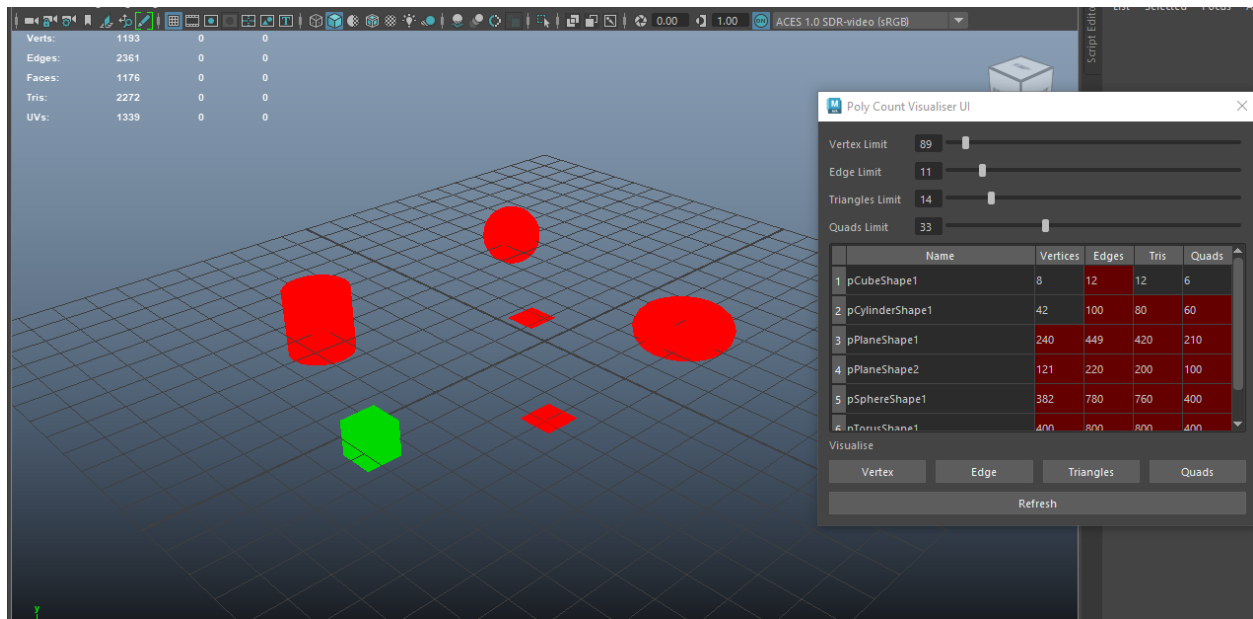
Pressing the visualiser button for vertices.



Geometries with polycount over the vertex limits are visualised in red while the ones below it are visualised in green.



Pressing the triangle button to visualise triangle polycount.



Geometries with polycount over the triangle limits are visualised in red while the ones below it are visualised in green.

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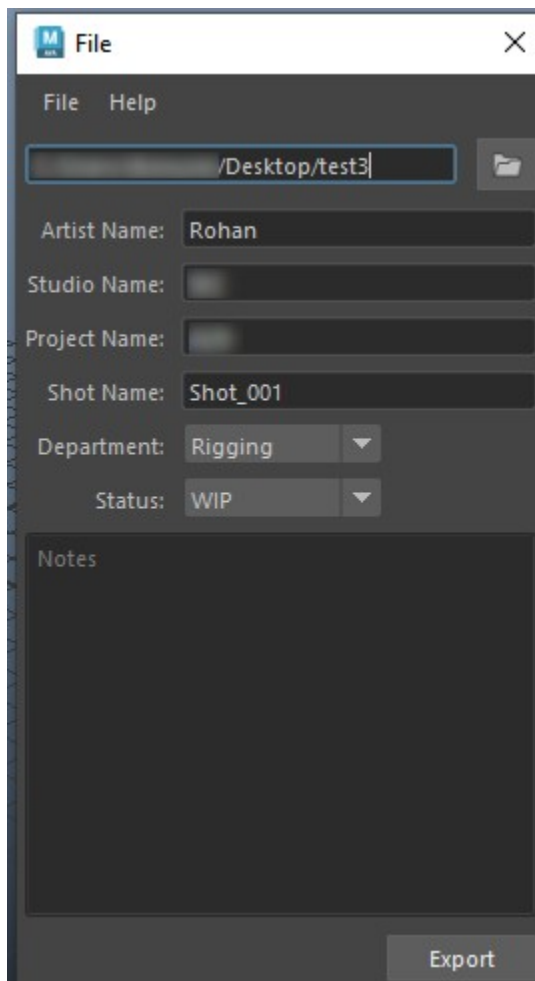
File Saver

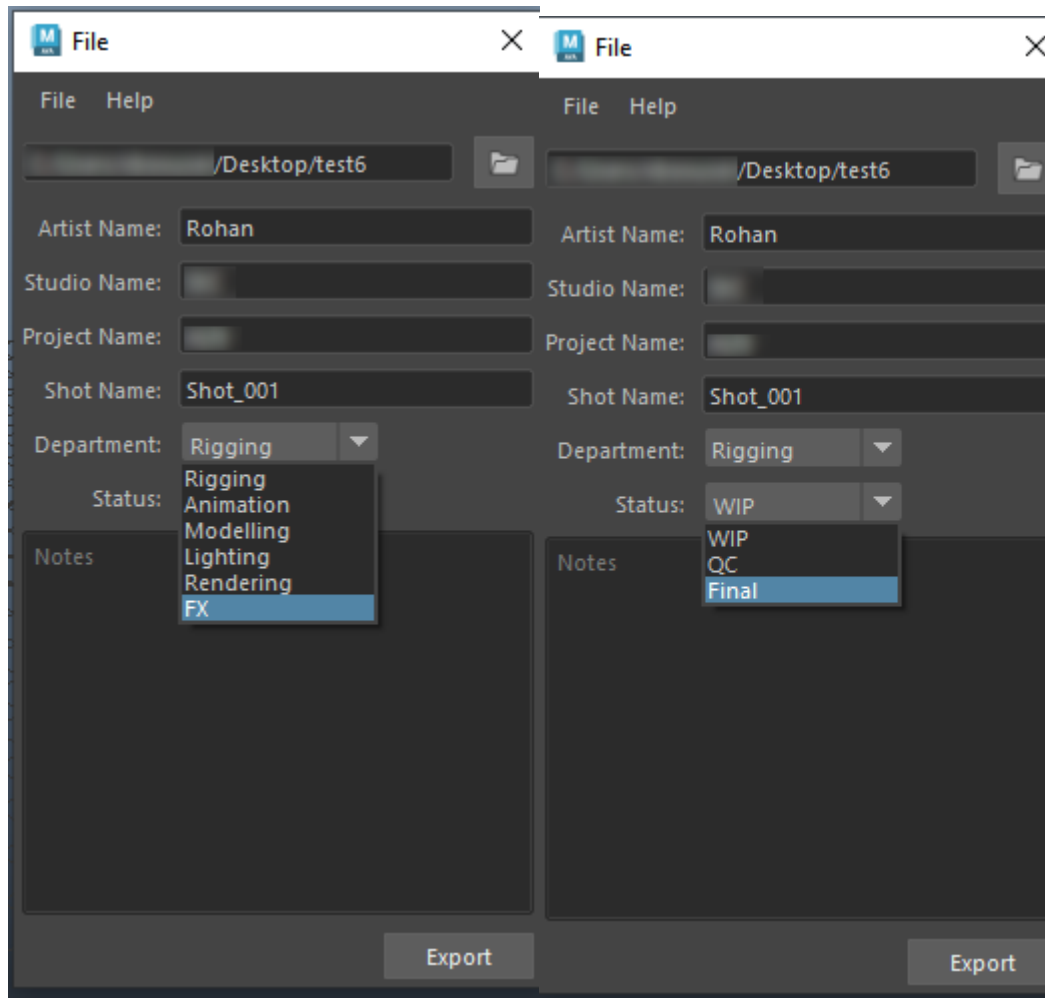
Problem:

Saving files with appropriate filenames and information can be cumbersome.

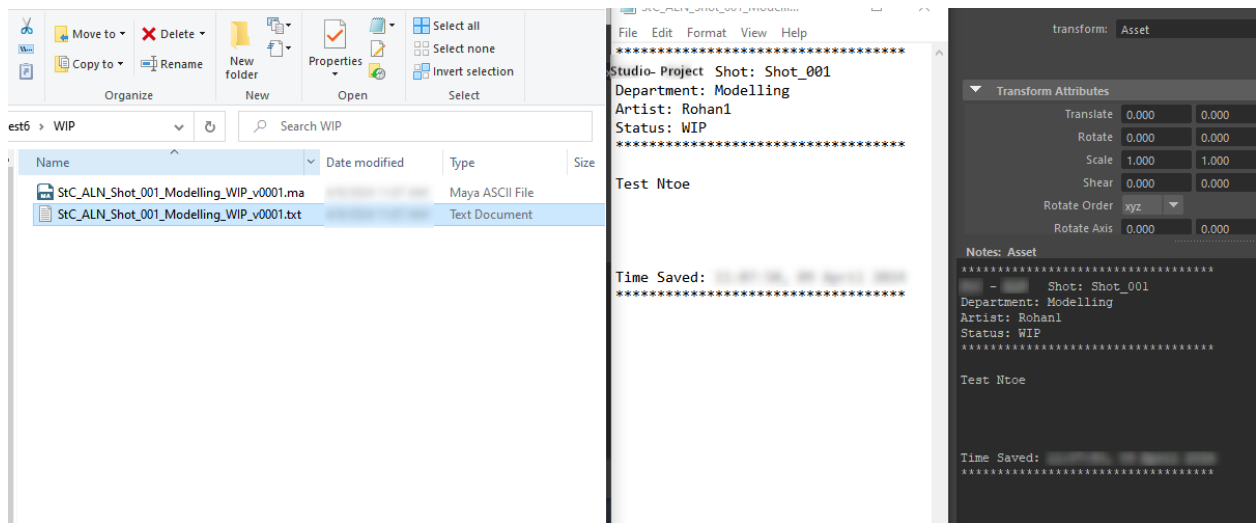
Solution:

The tool includes line edits for Artist Name, Studio Name, Project Name, and Shot Name, along with comboboxes for department and rigging. There's also a line edit for the location, defaulted to project/scenes. Upon pressing the export button, the tool saves the file with a name incorporating the input labels, alongside creating a text file in that directory with all the info and save time. Notes written in the textEdit are saved as a note in the text file. If there's a group called Asset in the scene's root, its notes are updated with all the info. If the Status is set to QC or Final, the original path of the currently saved file is saved in the text file and the asset notes. If the file is saved again without changes in location or status, the file number is automatically incremented, and the info is appended to the text file.





There are combo boxes to select department and Project Status. There is a line edit and a button to launch a folder dialog to set where the file needs to be saved.



After saving the info and notes are saved in a text file as the same folder as the file. If there is a root level transform node called Asset then the info is saved in the notes of the transform node.

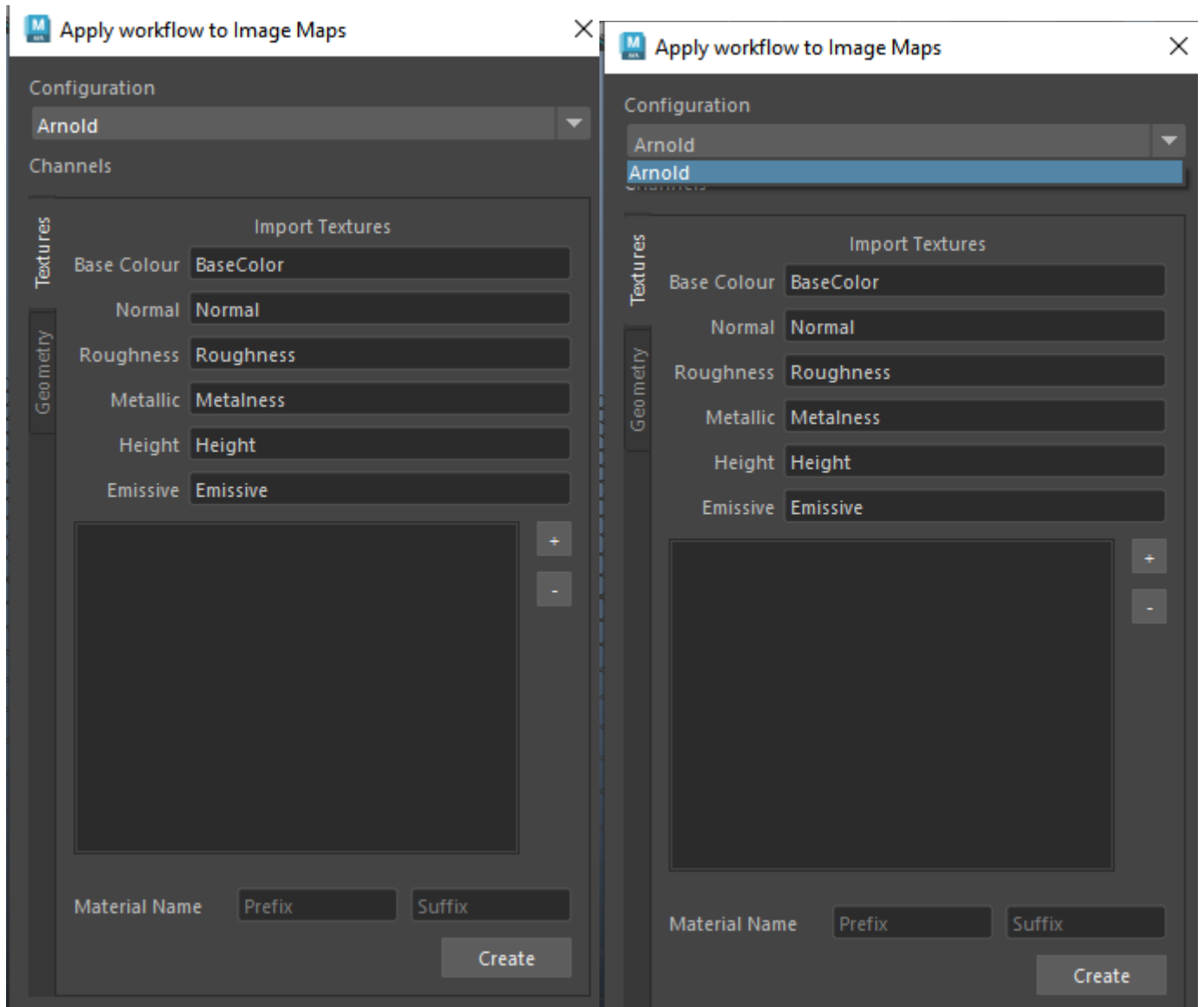
Material Importer

Problem:

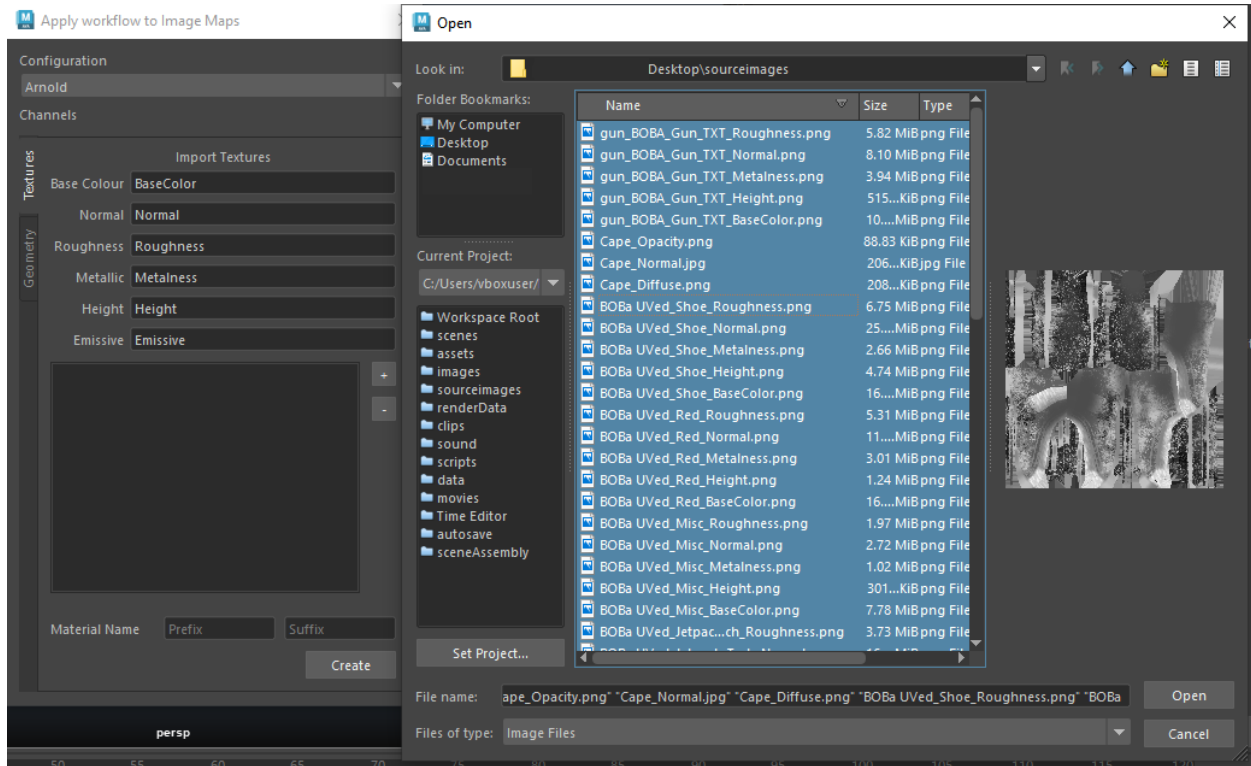
Substance importer can only import one material's textures at a time.

Solution:

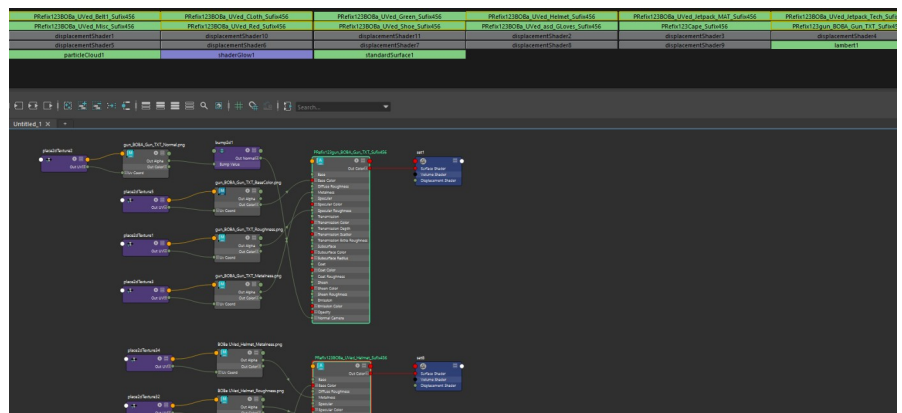
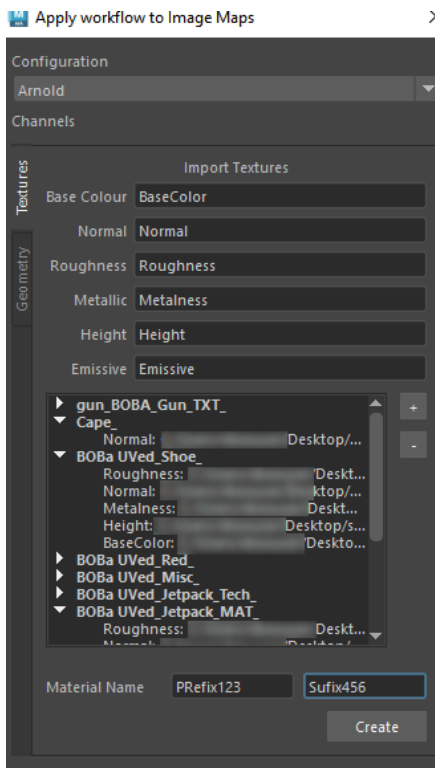
The tool provides a configuration combo box to select which shader to use (currently only Arnold Standard Surface is complete). Users can input material suffix patterns in line edits (e.g., XYZ_normal.exr). A tree widget displays materials and imported textures. Buttons allow users to add or remove items from the tree widget. Adding an item opens the Maya file window where users can select .png, .jpeg, .tiff files. Selected filenames with the same name but different suffixes are added into the same materials. Line edits for adding prefixes or suffixes for materials are also provided. Once set, the tool creates materials, imports texture files, and connects them to the material. Additionally, it sets the texture file nodes' color mode (e.g Base_Color is set to sRGB, roughness to RAW).



UI of the tool. Combobox to select the workflow configuration. Only arnold done right now.



Pressing the plus button opens a maya file dialog and all necessary files can be selected.



Once the they are selected, they are group by their names and filtered and arranged by the inputted file patterns. Any material that arent needed can be removed using the “-” button.

Prefix and Suffix of the materials can be input. Pressing create creates the materials and connects the textures.