



# DEMON CHASER

CREATING A LOW POLY CHARACTER





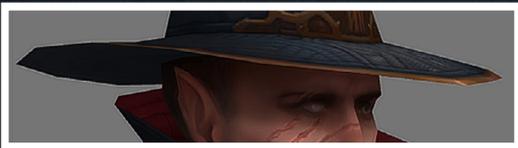
## CHAPTER 01

PAGE 04 | CREATING A CONCEPT & MODELING



## CHAPTER 02

PAGE 12 | MAPPING



## CHAPTER 03

PAGE 16 | TEXTURING



## CHAPTER 04

PAGE 24 | RENDERING & PRESENTATION



# CHAPTER 01

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## ***CREATING A CONCEPT AND MODELING***



# DEMON CHASER Chapter 01

## CREATING A CONCEPT & MODELING

Software used: Maya, Photoshop, ZBrush, Deep Paint, Marmoset Toolbag, Adobe Premiere & Faogen

My name is Tamara Bakhlycheva and I'm a freelance character artist also known as First Keeper. This is my first tutorial about making an "old school" low poly 3D character. But what does "old-school" exactly mean? Simply put, it means the model is not going to contain many triangles and it will have full hand-painted Diffuse textures, Specular maps and Glow maps but no Bump or Normal maps.

My tutorial will start with the basic modeling steps and I'll try to show the tricks I use for creating good looking models, hand-painted textures and for presenting the image well upon completion. It may be different from your own pipeline and I don't claim to be 100% right on all aspects, but I'll share my workflow and I hope that some of these tips will be useful for you.

Here is a list of software that I'm going to use:

- 1) Maya
- 2) Photoshop
- 3) ZBrush
- 4) Deep Paint
- 5) Marmoset Toolbag
- 6) Adobe Premiere
- 7) Faogen
- 8) Google!

## MODELING

The first step in creating a character is an idea or concept art. Unfortunately concept art isn't my strong point, so I think you would be better off learning about this from a different artist. If you're going to create a non-commercial character you can use another artist's concept. Most 2D artists would be happy to see their character made in 3D, just don't forget to ask the author's permission. So I did. I decided



to use a gorgeous series of concepts of a character called the "Demon Chaser" made by Slipgatecentral (Vadim Bakhlychev - slipgatecentral.deviantart.com). These were made for Dominance War III but were never created in 3D (Fig.01 – 07).



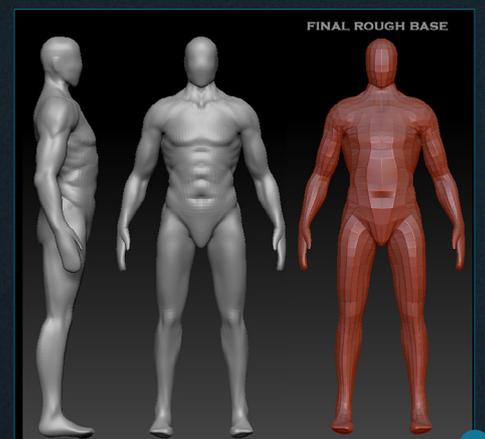
These concepts have a perfect detailed density and also provide a good reference for human anatomy. Before I start working on each model I try to analyze the concept carefully. I think about how I am going to build it step by step. How many parts are there? How will these parts be connected to each other? Sometimes I color-fill the concept and each different color shows a separate part of the mesh (**Fig.08**).

If you make models to help yourself practice, try to give yourself some technical limits: an approximate poly-count and amount of textures and their resolutions can be limited fairly easily. I decided to make this model within the 7000 triangles limit, and with 3 textures: weapons (1024 x 512), body (1024 x 1024) and face (512 x 256). That's actually a little too old-school, but why not. Another point here – this guy wears a coat and the coat needs to have duplicated polygons because most game engines don't have double-sided materials, so areas like the coat with double faces can add polygons to your count.

ZBrush is a great tool for creating simple human or monster structures. I made a simple base using ZSpheres and the Move, Scale and Rotate tools. Don't forget to switch on Symmetry (X) while you build your rig. You can always check how the structure will look in Polygonal mode. To do this just push the A button or click Preview in the Adaptive Skin menu. All tool menus are usually placed on the right side of the viewport (**Fig.09**).

After I had done this I made an Adaptive Skin with a Density of 1 and added two additional SubDivs (Ctrl + D) (**Fig.10**).

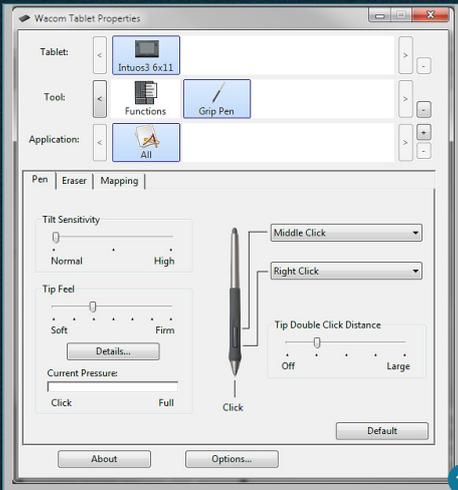
The next step is the polygroup settings. Polygroups allow you to hide things easily and check the body silhouette. Make a mask by hand by drawing while holding Ctrl (you can erase by holding Ctrl + Alt) then blur it and create a group for masking. You can then clean the mask in the Masking menu. The PolyFrame



button on the right side of the workspace allows you to see colored polygroups along with the wireframe (**Fig.11**).

Next I made a rough sculpt of the human body. It's very useful to find some anatomy references at this point. The main task here is to recreate correct forms, proportions and silhouette. Keep the mesh simple; don't go too far with details as it's not necessary at this stage. Good tools at

this point are the Move and Clay brushes. Press Shift + Ctrl and click on body if you want to hide the arms and just work on the body. To unhide everything just press Shift + Ctrl and click on an empty area. This is how you work with polygroups. When you are satisfied with your base mesh you can repotologize it in ZBrush or Topogun, or just export your model into Maya in a low Sub-Division level like I did (**Fig.12**).



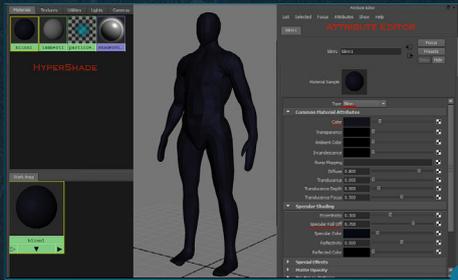
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I use hot keys, some of them custom. I strongly recommend using hot keys and the main Maya menus for comfortable and fast work. Maya works perfectly with a Wacom pen tablet, all you need is to bind the middle mouse click on to the top button of the pen, which is by default a left mouse double-click (Fig.13).

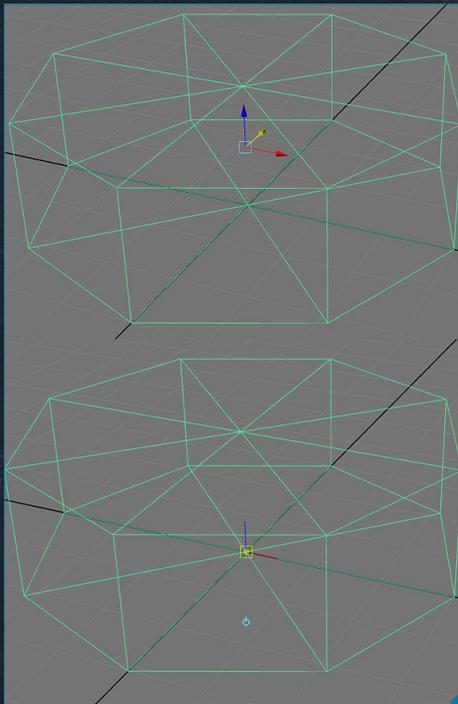
After importing the model into Maya go to Hypershade and create a new Blinn material. In the Attribute editor (Ctrl + A, or double click on material) change the color to a dark color. This kind of material is nice for the early modeling stage because it shows the silhouette well and, at the same time, you can see the hard edges of the topology (Fig.14).

I also deleted the left side of the model and made it a Duplicate special (in the Edit menu), but before doing that be sure that the model's pivot and model is located at the center of the grid. You will be forced to edit the pivot position often. To do this press and hold X to activate Snap to Grid mode and move the pivot to the cross (press Insert to exit this mode) then apply a Freeze Transformation to the model (Modify menu) (Fig.15).

During this stage I keep in mind two things: silhouette and topology. The silhouette is a very important thing for 3D characters. It's like the foundation for a future house and it has to be strong. I put topology in second place because in the block-out stage it's not very important,



14



15

but you still need to be moderate and make sure you don't add too many polygons. When you finish the block-out you'll need to pay more attention to topology (Fig.16).

Here are a few hints as to how to keep good and clean topology:

- Try to keep the mesh in similar size quads. At the same time feel free to use triangles. Actually we'll convert our mesh to triangles for texturing and rendering because a triangle is the true form of a polygon and game engines see only triangles. Quads are just for human comfort.
- Every polygon should work for silhouette – don't add too many polygons.
- Add additional loops to bending areas (elbows, knees).



16

- Some polygons can be extruded in new objects later. Place edges loops in some places as a future base for extruding a new object. For example, if I know that a specific polygon row is going to be extruded as a belt, I make sure that the thickness of the base row will be the same as the thickness of the belt.

Here are the tools that I used to create the model:

- Soft Selection. Press B and move the sub-components. To adjust the influence hold B + the left mouse button and move the area.
- Split Polygon tool and Split Selected Edge Ring. These are in the Edit Mesh menu or in the Shift + right-click menu. It's much better to bind it to your own hot keys. These tools add new edges.



- Sculpt Geometry tools (Mesh menu). This works like some of the brushes in ZBrush. The most commonly used is the Relax tool. I like it a lot because it's a quick way to make your topology smooth and consistent (Fig.17).

When the rough body base was done I started to add new details, like the pants and sleeves. To do this you need to refer back to the concept (Fig.18).

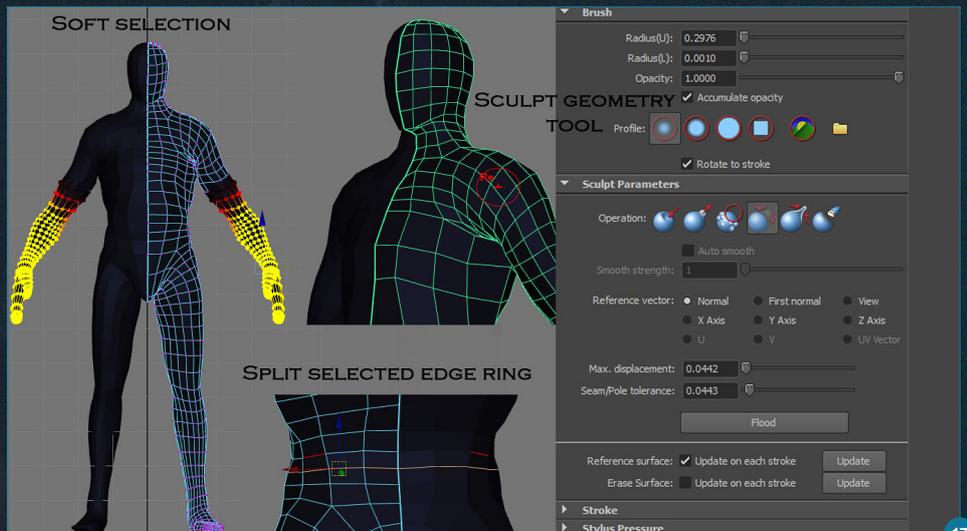
The next step is extruding the new details. As I mentioned before when talking about the topology, try to place edge loops in places where you're going to extrude new details. On the picture you can see what I mean (Fig.19).

First, you need to duplicate the right part of the body and select the belt faces. Next invert the selection (press Shift + the left mouse button and select all of the model using the Marquee tool). Delete selected polygons and slightly scale the belt and extrude it. I also assigned another material and made a duplicate special. I added new details and used Snap to Points (press V) to attach the belt to the body even if they are separate objects. This is the most common type of snapping and you'll use it all the time (Fig.20).

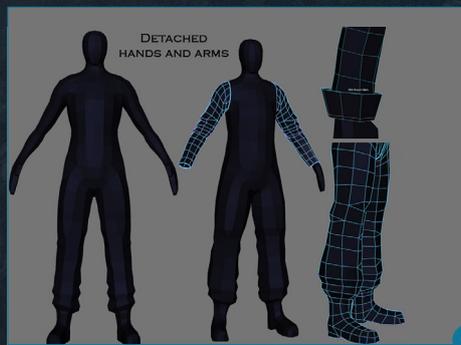
As soon as you are satisfied, start assigning soft and hard edges (Shift + right click the menu in Edge mode). That'll help in the future when texturing. For example, hard edges on the toes will look great with a metal texture (Fig.21).

Another way to add new objects is to create a simple primitive plane (Fig.22).

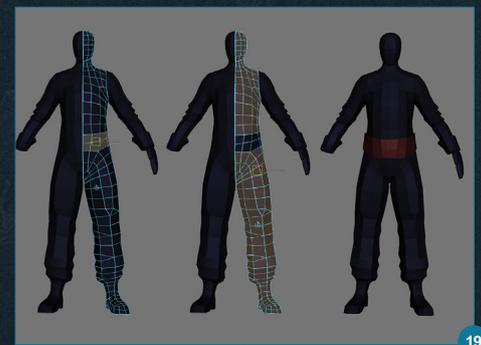
The creation follows the same pattern from here onwards. You need to add the details step-by-step. Now it's time to put our belt straps on their own layer. Layer systems are very helpful if you want to keep things in order. It also helps you to hide objects or switch Transparency on and off (Fig.23).



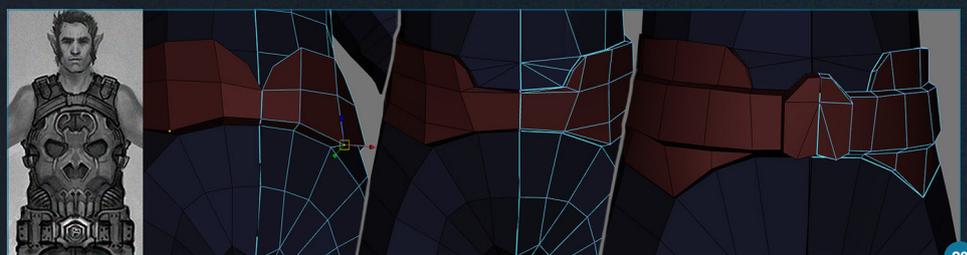
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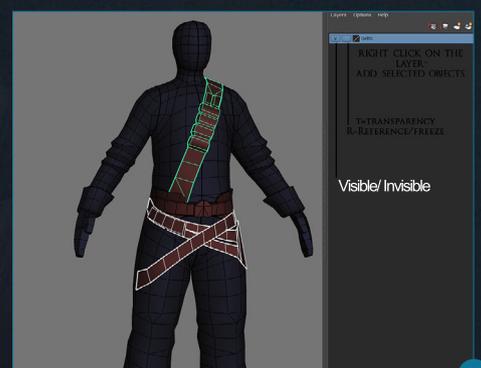
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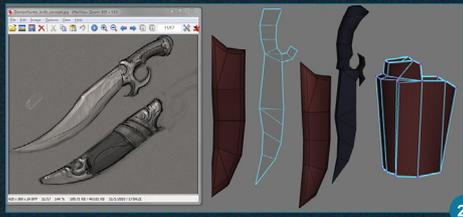
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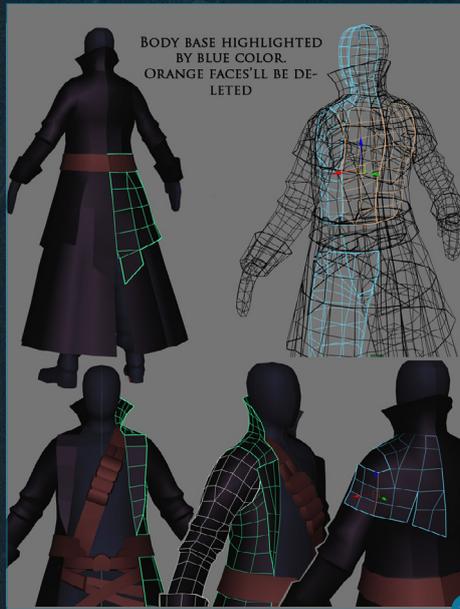
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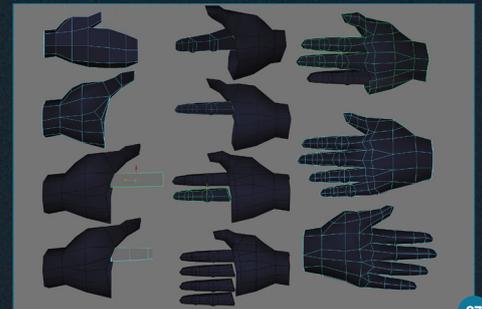
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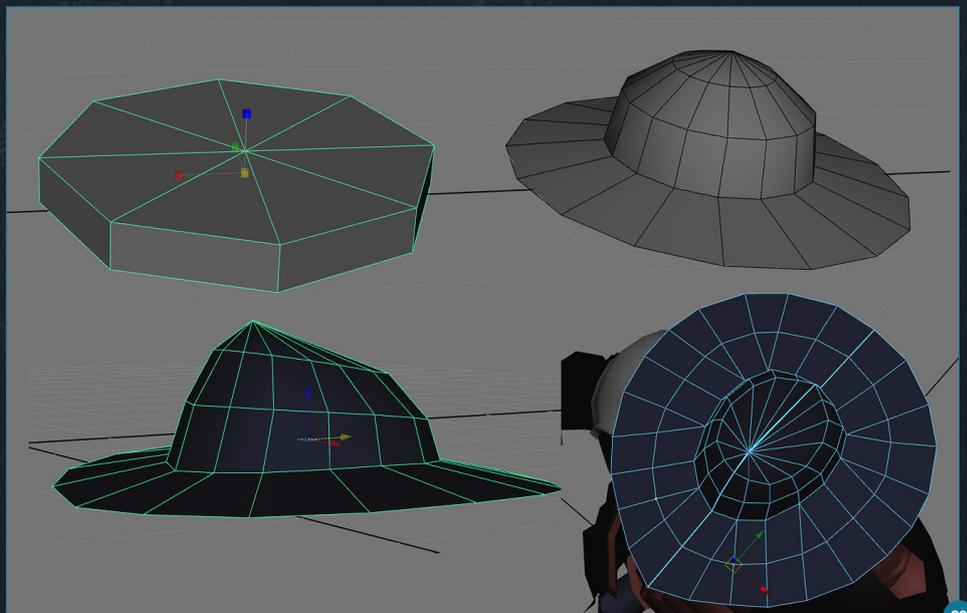
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Always make sure that you have a picture of your concept open. I have two monitors and put my concept on my second monitor (Fig.24).

I used the same tools as I have already mentioned to model the trench coat. I didn't delete the faces from the back of the character yet as I'll do it later. I also merged extra polygons on the coat, because in the next step I'll add another trench coat plane above this one (Fig.25).

I added to the trench coat around the neck, collar and back. After this was done I could delete the original back polygons from the body mesh. I also stressed folds by creating hard edges (Fig.26).

Now it's time to make the hands. I started with a simple mesh and did the thumb and palm first. I used box primitives to make the fingers. I split the phalanges and added additional edge loops.



29

After that I duplicated the finger three times and scaled and attached these fingers to the hand (Fig.27).

Here is a simple block-out of the shoulder pad (Fig.28).

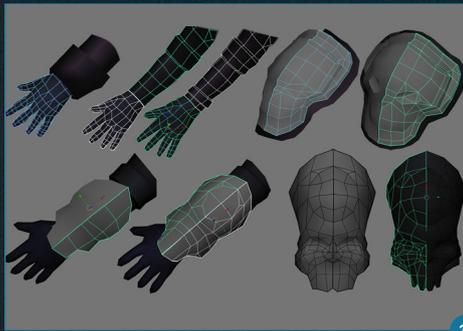
A good starting point for a hat is a simple cylinder that you can then scale and extrude. I also used the Split Polygon tool here to add new vertices on the hat rim, because it was too angular (Fig.29).



30

I started with a plane to make the neck scarf (Fig.30).

Here is the workflow for the character's right hand. As you can see here that the left hand is finalized. I used this mesh for both hands, but according to the concept it should be a little thicker. The shoulder and hand armor geometry is pretty simple since most of the detail is going



31

to be painted on the texture later. Pay attention to the hard edges as they will work well texture the texture in the final render (Fig.31).

Another thing to keep in mind is the polygon count. The main parts of every humanoid model are the head, shoulders and upper torso. Especially in games with a first- and third-person view. Each time people take a look at a character they focus their sight on the head area. So if you have additional polygons, don't hesitate to use them for a nice, smooth silhouette in that area (Fig.32).

It is worth doing another proportions check after assembling all the details. I created a plane with my concept in the background to create this accessory.

This type of concept is pretty easy to turn into a model. I've created a plane and assigned the concept as a texture. You can switch on the opacity in the layer options as I mentioned before or use X-Ray mode (menu button on the top of the viewport window). I made the rifle with a single mesh, except the belt which was made separately. I try to plan all edges before extruding. After extruding I scaled the orange area and added a few details. It's a pretty simple way to do low poly weapons (Fig.33).

The same way works for the scatter gun. I just extruded different edges for the top part (Fig.34).

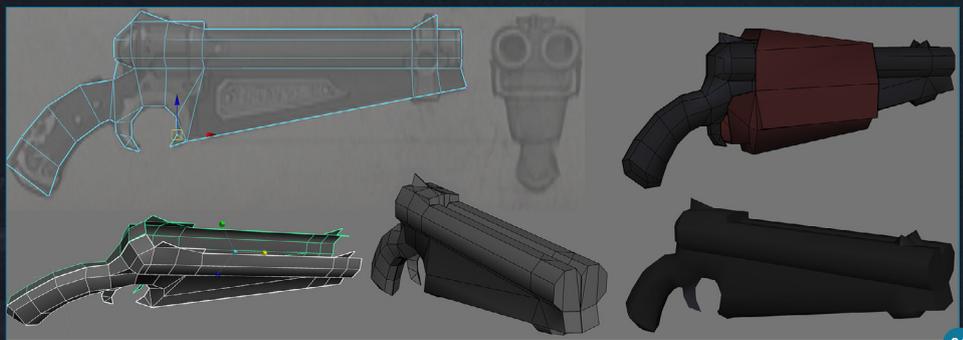
Now it's time for the most interesting and important part of every humanoid character. You can build a beautiful model, but all the



32



33



34

attractiveness is ruined if you fail with the character's face. I always give special attention to making a head. Don't be too lazy about fixing areas that look wrong and use references a

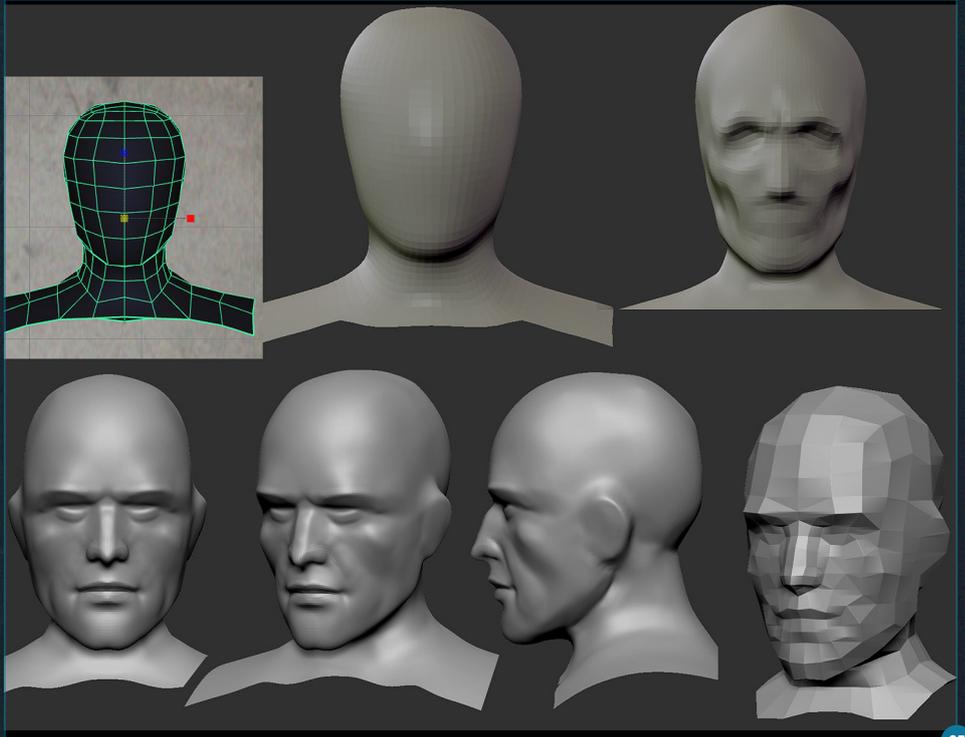
lot. My base mesh didn't have any triangles, only quads, because I'll import it to ZBrush and triangles can cause topology issues in this program after subdividing. In the first phase I



# DEMON CHASER Chapter 01

worked on the lowest sub-division levels and used mostly the Clay and Move tools. Too many polygons at this stage will slow your working process. Forget about details, only think about basic shapes. I made a rough sculpt because I only needed large details here for the low poly shape. You can also repotologize it in ZBrush or Topogun, or export the base to Maya and fix it there as I did with the body (Fig.35).

This is a shot of the almost-finished model. Now we are ready to unwrap it (Fig.36).



## TAMARA BAKHLYCHEVA

For more from this artist visit:

<http://first-keeper.livejournal.com/>

Or contact them at:

[tamara.salatova@gmail.com](mailto:tamara.salatova@gmail.com)

35



36

# CHAPTER 02

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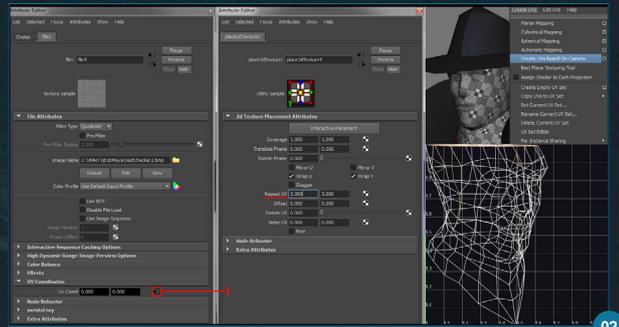
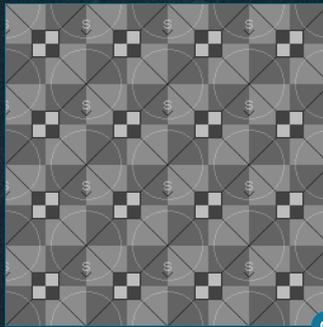
## ***MAPPING***



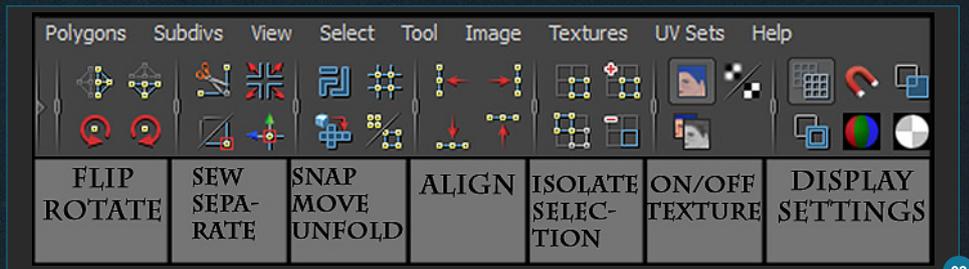
## MAPPING

Software used: Maya, Photoshop, ZBrush, Deep Paint, Marmoset Toolbag, Adobe Premiere and Faogen

The first thing that we need when unwrapping is a good checker texture. I usually use this one (Fig.01).



I created a new Lambert material and assigned my checker tile to the Diffuse option. In UV Coord you can change how many times this tile should repeat. You probably won't see any differences after assigning this new material to your mesh. That is because it doesn't have default UV coordinates yet. To create basic UVs go to the Create UVs menu at the top and choose Create UVs Based On Camera. This will mess up the UVs, but it is enough to start working with. I applied it to all the meshes before working with Road Kill or Unfold (Fig.02). Road Kill UV tool is a very useful free plugin for Max, Maya and XSI. You can find on the web.



In this picture (Fig.03) I wanted to show a few tools used for UV mapping in the UV Texture editor. I won't describe all the tools, but I'll show some of the most useful ones. You should explore others too; maybe you'll find something useful for different situations:

**Flip and Rotate** – I don't think it needs explaining.

**Sew and Separate** – These tools are for sewing and cutting UV parts.

**Snap, Move, Unfold** – These are good for automatic mapping, but not in our case.

**Align** – This is an alternative for the Align by Scale tool.

**Isolate Selection** – This can help if you want to unfold half of a UV and keep straight borders after alignment.

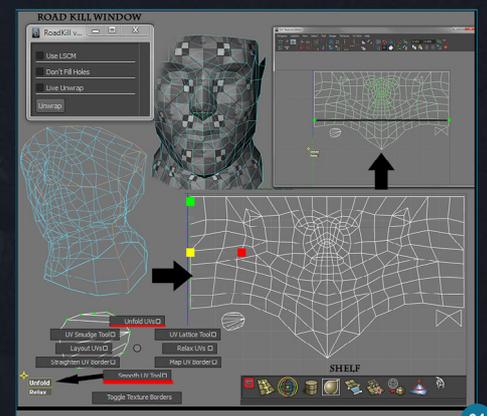
**On/off Texture** – During the mapping process this will dim a dark background, which will be good when we do the eyes.

**Display Settings** - This toggles the display for the texture borders on the active mesh (you have to switch this function on for each separate mesh).

The Road Kill script looks like a small window with three options and one button. I don't usually use those options. In Edge mode select the edges which are going to be UV seams. Try to minimize the number of UV pieces and draw seams on hidden parts. Before you unwrap check carefully that your mesh doesn't have any instanced copies and that everything is unhidden – if you don't some errors will occur. Select all the seams and press the Unwrap button in the Road Kill window. Switch on UV point mode and open the UV Texture editor. Shift + right click menu will be another favorite trick in your arsenal. There are two main tools which we'll use a lot: Unfold UVs and Smooth UV (Unfold and Relax). These two Unfolds are not the same; you can see the differences between each if you try it. I selected the UV points and unfolded the cap of the head. This part will be invisible, which is why this UV shell is so small. Actually those faces can be deleted

as well. For the large character face UVs I used Scale to align the horizontal and vertical border points. I also aligned two points along the seam (black line with green dots on pictures) and unfolded the rest of the UVs except for the straight borders (Fig.04).

Why did I do that if it's going to mess up our texture on the borders? For game models (especially for old-school models) it is very important to optimize not only polygons, but count texture distribution too. Even if we have small textures we will still be able to make our texture resolution higher by using smart and rational UV layouts. Having straight UV borders always helps, because square or rectangular pieces are easier to layout as you can see in the pictures later. It's also a good thing to group a few UV shells from one object together; this





is kind of strange when one half of that is at the top and another half is somewhere far from it (Fig.05).

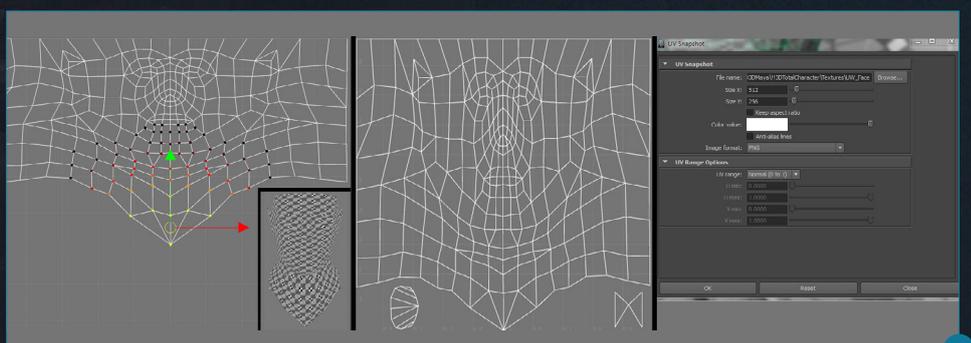
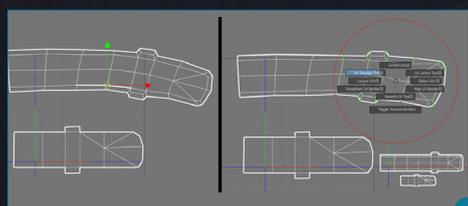
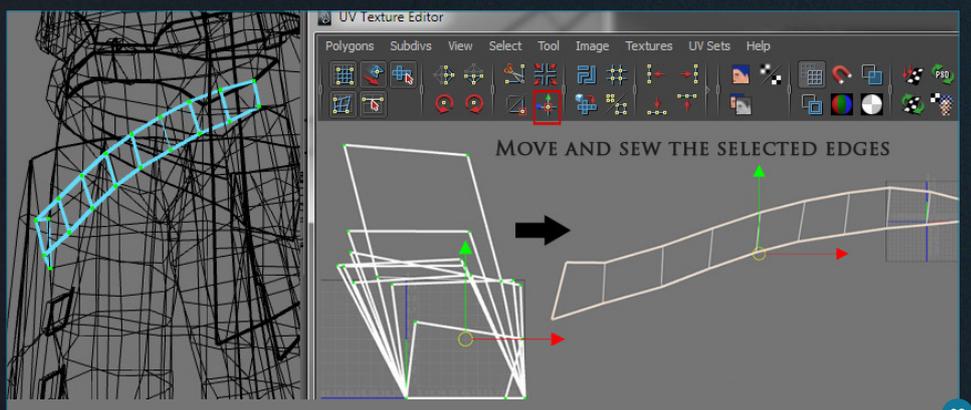
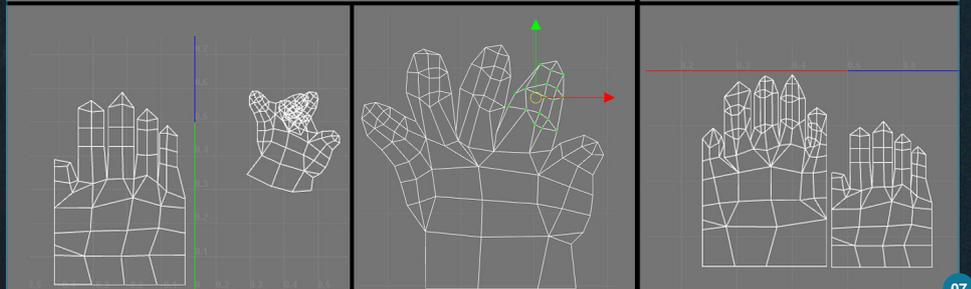
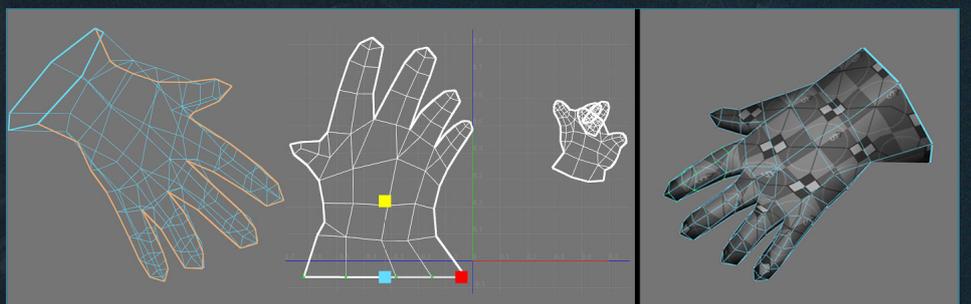
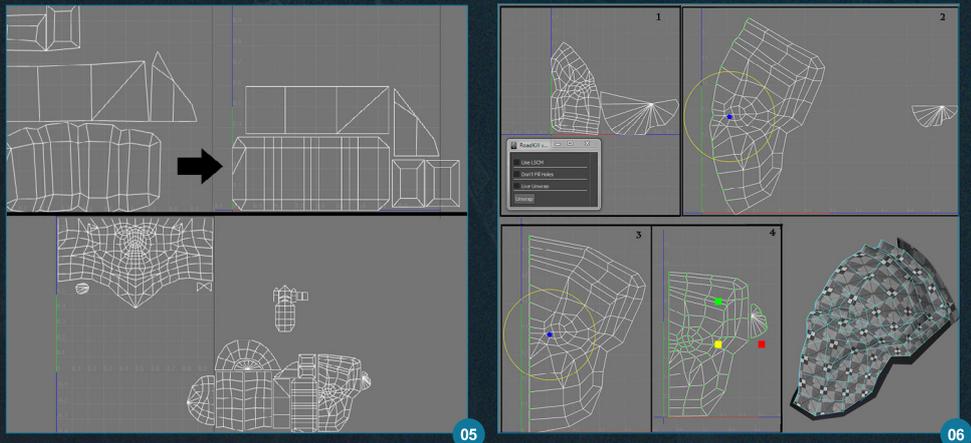
We are going to create our texture using Projection texturing. Stretches won't be obvious. At the same time it doesn't mean you should ignore stretches. Keep your eye out for them and deal with them as they arise (Fig.06).

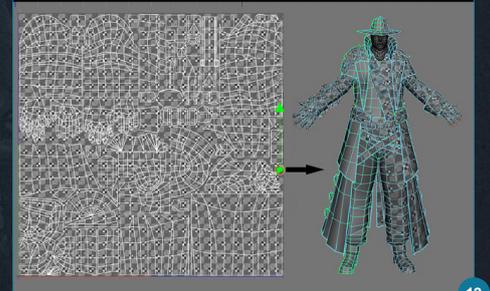
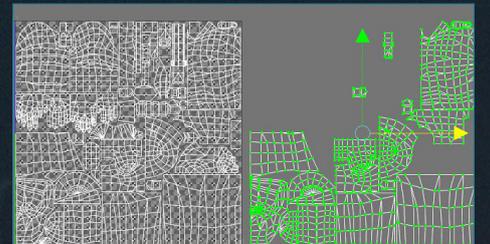
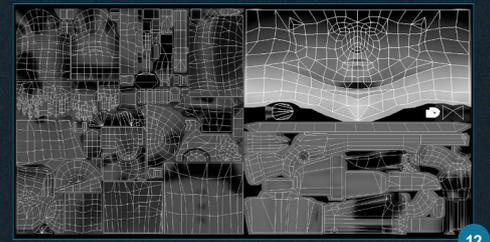
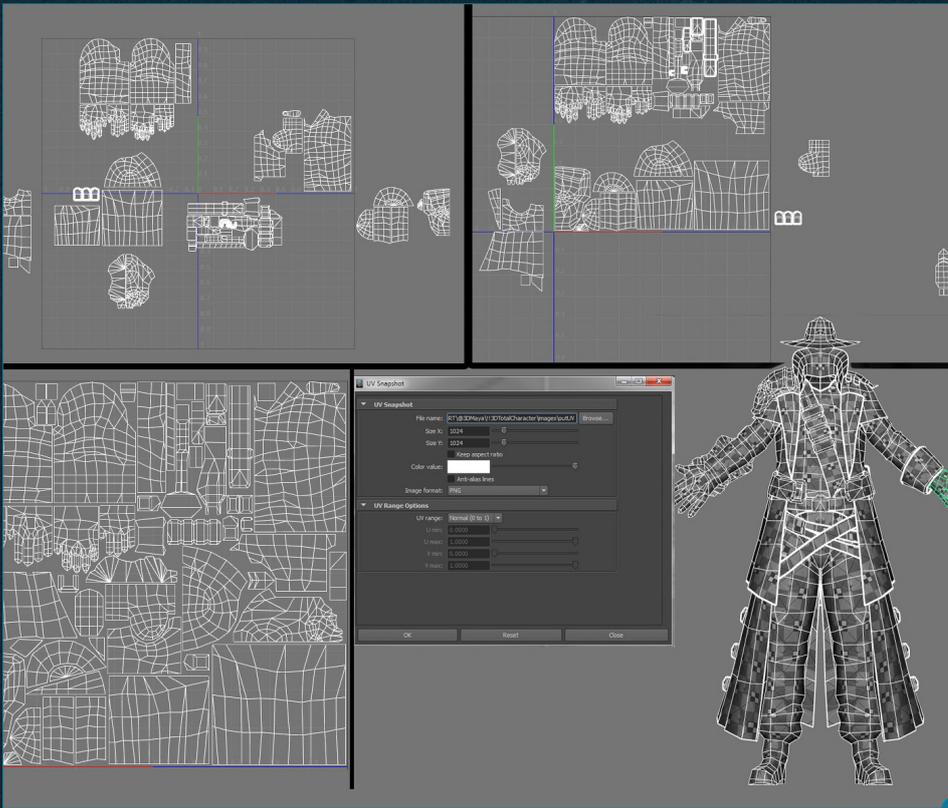
Raw UV shells of the hands look like fans and require a lot of space on the map, which we can't afford. In Fig.07 you will see that I merged two UV shells for the hand with a seam. Pay attention to errors on fingers; it'll take some time to carefully tweak them point by point, but hand-made mapping will make your texture neat and save you some UV space as well.

The simple way to stick them all together is to select all of these pieces and Move and Sew the selected edges (Fig.08).

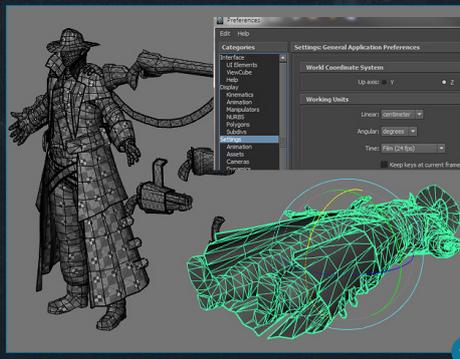
Another useful tool is the UV Smudge tool. If you need to straighten some curved UV shells, like on part of the belt (Fig.09), you can use the UV Smudge tool and after that align the border UVs.

Soft Selection works for UVs with same hotkey (B). I moved the less important part of scarf up slightly. The texture for the head was about 516 x 256, but before I exported the UV as a PNG I scaled it into a square. The head checker looks pretty bad after this sort of manipulation, but don't worry it will work correct with a 526 x 256 texture. Make sure that your mesh is selected as an object (green wire frame) before you push the OK button in the UV Snapshot dialog window. It won't take a snapshot if your model is in a different mode (Fig.10).





Composing all shells in one field is like a game of *Tetris*. You have to rationally put them together without changing them too much. The checker texture on all parts should have the same sized squares, but areas that you can't see on the character can be small on the UV map. Parts on the head, shoulder, upper chest and back could be slightly bigger because as I mentioned before in the modeling part, these places are the first points that grab the viewers' attention. Be careful with scaling; the character should look good as a whole (Fig.11).

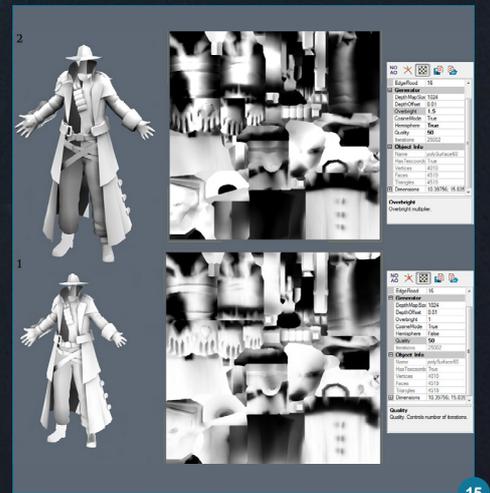


Here are three samples of my mapping (Fig.12). When baking an Ambient Occlusion (AO) we'll be using a program called Faogen (official page: <http://www.rusteddreams.net/faogen.html>). We need to do a couple things before exporting the model for baking. Select the symmetry UVs and scale them into one small piece. For this you can use Select UV Shell. This function allows us to select all the UVs within the shell just from one selected UV point (Fig.13).

Not every program has the same YZ axis orientation. If the model looks wrong in Faogen

you'll need to adjust your model in Maya before you export it. You can check and turn the Maya axis for your current project in the menu (Fig.14).

Faogen has a very simple main menu. You can switch between a 3D and UV view. The yellow triangle initiates a baking process. I baked two types of AO – default and directional – and used



both of them for the base lights and shadows for my texture (Fig.15).

Sometimes for proper results it's better to bake separate meshes together, for example the hat should cast a shadow on the face (Fig.16).

## TAMARA BAKHLYCHEVA

For more from this artist visit:  
<http://first-keeper.livejournal.com/>  
 Or contact them at:  
[tamara.salatova@gmail.com](mailto:tamara.salatova@gmail.com)

# CHAPTER 03

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## *TEXTURING*



## TEXTURING

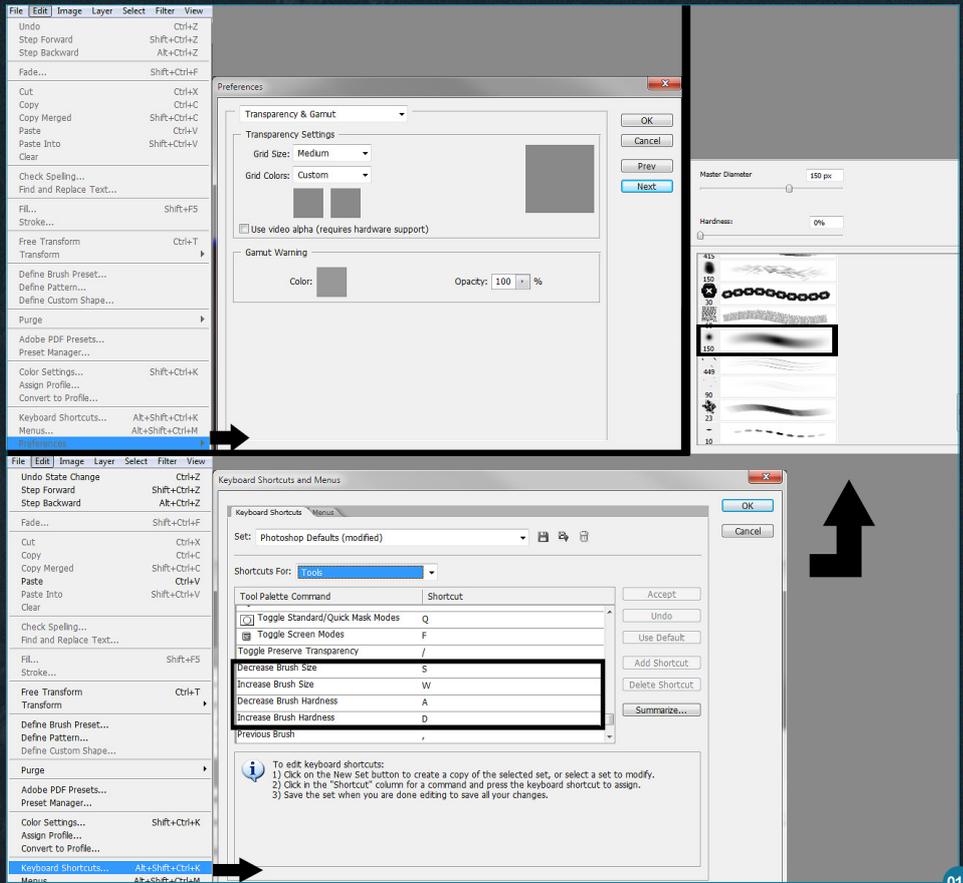
Software used: Maya, Photoshop, ZBrush, Deep Paint, Marmoset Toolbag, Adobe Premiere and Faogen

So far I've created three base PSD files for three textures. I always put a layer showing the UV wires on top of each PSD; usually it's turned off, but for the first stage it helps to select and fill the texture pieces with flat colors. There is also a directional AO set to Multiply and a default AO in Overlay mode. The rest of the layers are set to Normal mode. I'll work with them first (Fig.01a).

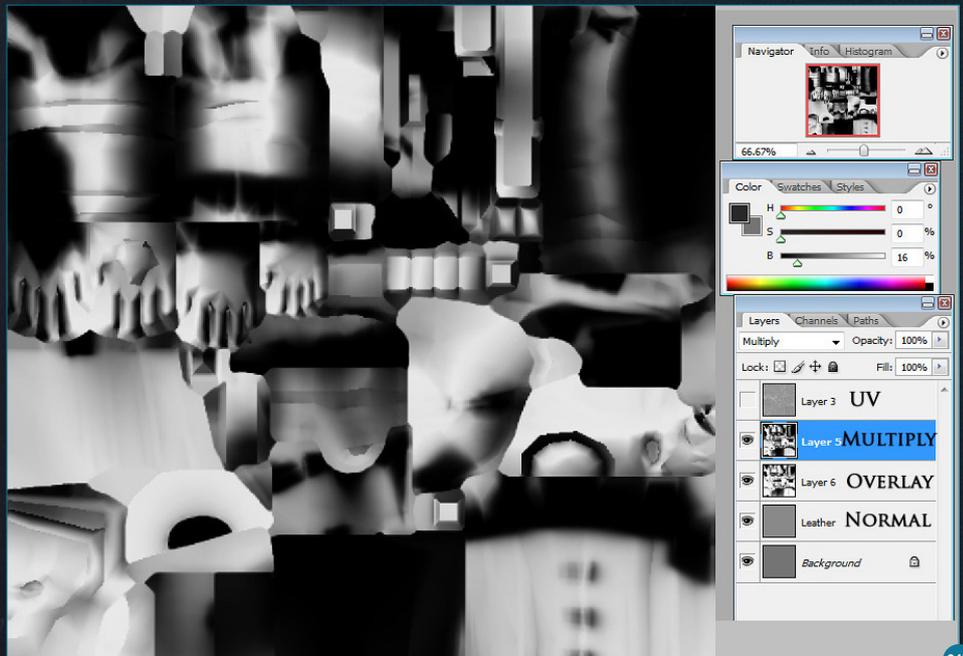
Take a look at some of my Photoshop settings. The default background usually looks like an annoying checker pattern so I change the colors of each square to the same grey color. When texture painting I always use a simple round brush, but with special hot keys set. When I work I often change the size or hardness of my brush. For example, a brush with hard edges is better for painting details, and a brush with smooth edges is good for first steps or painting shadows and smooth gradients (Fig.01b).

I used a new layer with a different color for each type of material. All of them are set to Normal. To select each piece I used the Polygonal Lasso tool. If you hold down Shift you can add new selections without losing previous ones. By pressing Alt you can delete part of a selection (Fig.02).

On the head texture I'll show how to work with Deep Paint 3D. There are a few other programs with similar projection texturing features – even the latest Photoshop has 3D texturing support – but I prefer good old Deep Paint. I will show you



01a

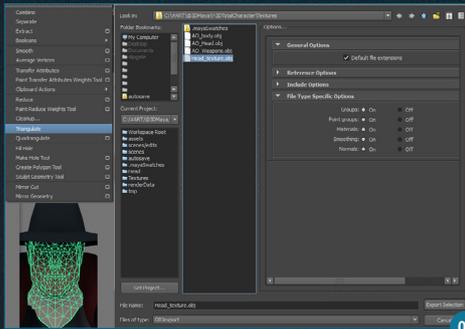


01b



02

how to draw textures using projections from this program in conjunction with Photoshop. Why Deep Paint? This software doesn't require a lot of computer resources and it rarely crashes. You paint your texture directly in Photoshop with the brushes and tools you are used to working with. In my opinion this program has three main downsides. Firstly you have to switch between Photoshop and Deep Paint every time you need to take or apply a new projection. Secondly, it doesn't support alpha channels correctly,



03

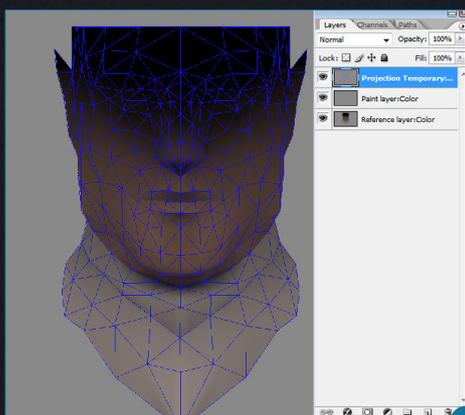
and lastly there are issues on the symmetry seams – I'll talk about that later. Anyway which program you choose is up to you, but this tutorial will help you to find out more about Deep Paint.

Deep Paint has different triangulation algorithms; it is not like in 3ds Max or Maya.

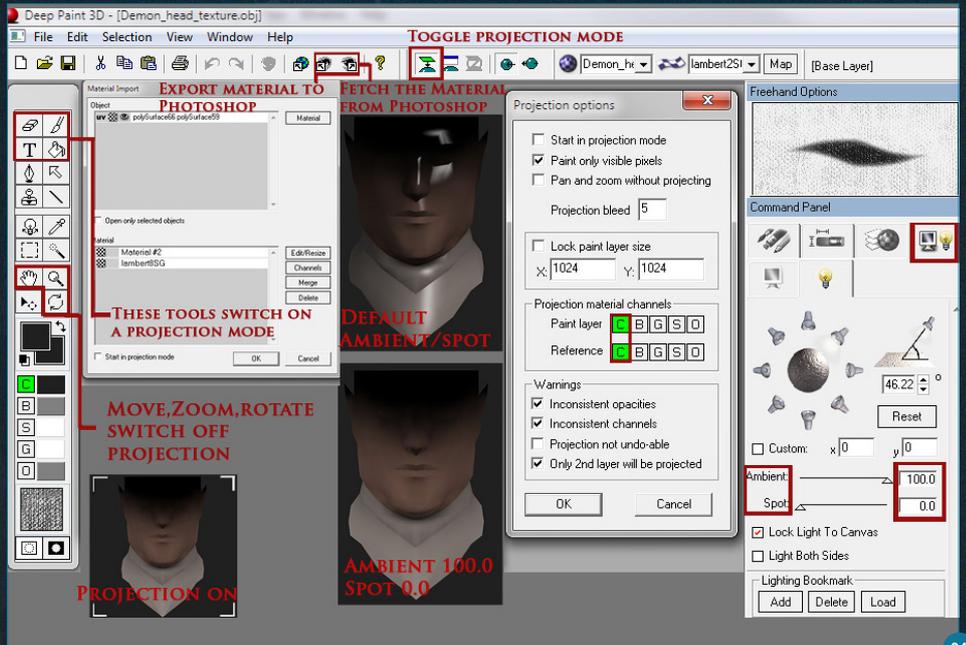
As you may know, every quad consists of two triangles and these are polygons that your computer processes. Quads are for our human comfort.

Once you have exported your quads into Deep Paint, you'll be able to paint the texture, but on your main program you'll probably see some errors with your texture. This is because Deep Paint doesn't triangulate in the same way as Maya. To counter this we'll triangulate our model before exporting it to Deep Paint. Make sure that your working meshes for Deep Paint are located in the same folder as your PSD textures (Fig.03).

In Fig.04 I've framed with red all the main options. When you launch the program for the first time you'll need to turn off all types of layers except for C (color) in the Project options menu.



05



04

Usually I use 1024 x 1024 as the size of the projection. The first window that you'll see is a Material Import window. All that you need to do is press OK, but if you didn't save your OBJ in the same folder as the textures it'll probably ask you to choose the texture destination, so to make your life easy keep everything together. Next what we need to change is the light settings. The default settings apply a shader which we don't want as we are going to hand-paint the texture with shading materials. Change Ambient to 100 and Spot to 0.

Deep Paint 3D has two modes – View and Projection. View is the standard mode with Zoom, Rotate and Pan tools. When it's active you can see purple staples around your model. Projection mode will freeze the model in one position and will place it in a special temporary PSD file in Photoshop. When it is active the staples are white. Using Zoom, Pan or Rotate will switch the model back into View and will apply the current projection PSD to the model. If you turn on Toggle Projection mode, you will still be in the View mode. To enable Projection press Eraser, Freehand or Fill; I usually press B for Freehand. Now when your model is frozen press the arrow above Export Material to Photoshop. Deep Paint will open the PSD automatically in Photoshop. If you want to get the projection

back from Photoshop press the right arrow on Fetch the Material from Photoshop. As you will have noticed Deep Paint has its own tools for painting, but they are not very good. Obviously Photoshop is much more powerful.

Fig.05 is how the temporary PSD file will look. It always has three layers which are as follows:

- Projection Temporary: Wire Frame – this shows the wireframe of the model
- Paint layer: Color – you can add further layers to this
- Reference layer: Color – this is the current texture view

While you work you can create new layers, but at the end before applying the material in Deep Paint you should make sure you still have the original file names. Deep Paint will take all the new information from the Paint layer: Color layer. It will ignore all another layers and any changes to the wire or reference layer. So if you painted something, for example, on the wire layer (which sometimes happens) don't worry – Deep Paint doesn't use that information. All that you should do before applying the projection is to save it in Photoshop (Ctrl + S). After that go in to Deep Paint and press the magic arrow that says Fetch the Material from Photoshop. The

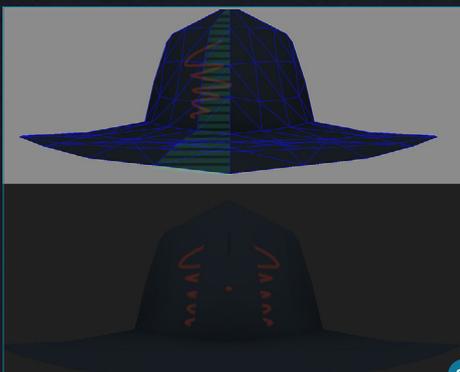


old texture will now change to the new one and that operation will not be Undo-able. To switch to View mode and apply your texture to both symmetry parts use Pan, Zoom or Rotate.

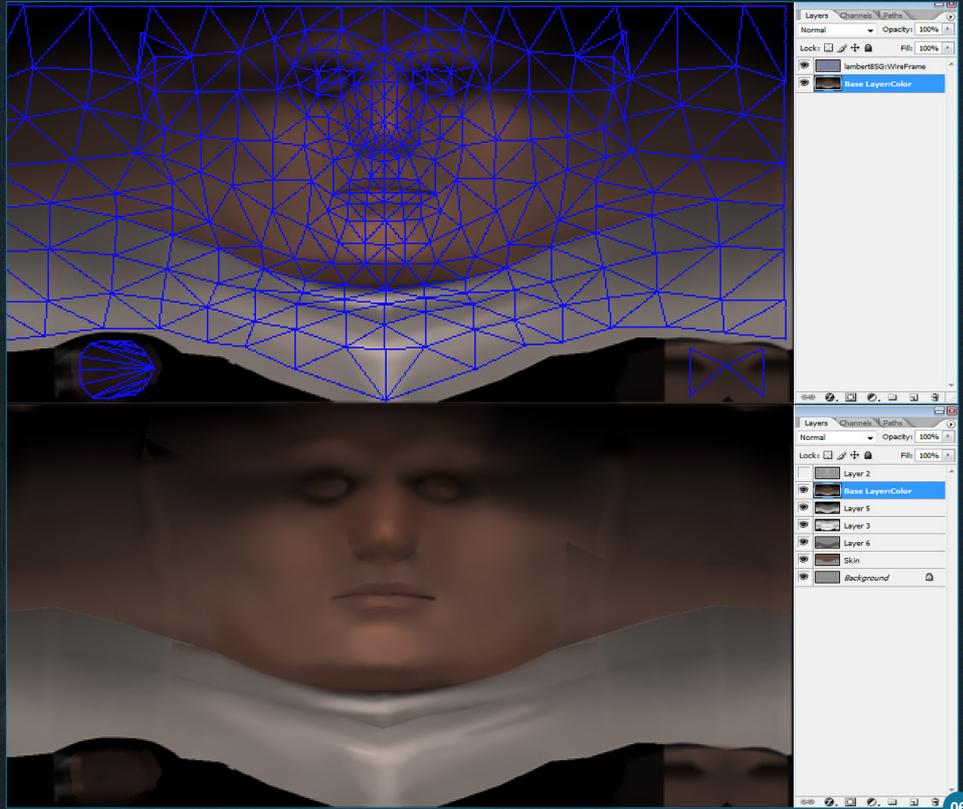
Now I'll tell how to get your texture after making some changes. In View mode activate Toggle projection mode then press Export Material to Photoshop (don't press Freehand because it will switch to Projection mode). Deep Paint will export the texture with the wireframe and diffuse layer. You'll need to move the color layer into your main PSD file. You can also work with the temporary texture from Deep Paint; just keep the default names. You can apply changes the same way as you did with the projection. I usually put a new diffuse layer above the AO. I always keep the original layers just in case I need them later. Every new diffuse layer goes above the last one. The PSD can contain about 60 layers. Always make a backup for all your main working textures (**Fig.06**).

I have mentioned before about errors on the symmetry seams. That happens if you work with a symmetrical model and paint the wrong half of it. Usually if you work with the main right side of the model and set the left side to Instanced you get the best results. As you can see in **Fig.07** I did it on the left-hand side and I got that error. Always make sure you're using the right side before starting.

Don't forget to make sure that there are no Maya shaders in the viewport. It's the same as we said earlier in Deep Paint – go to the Lighting tab then No Lighting to turn it off.



07



06

**Fig.08** shows my first pass for the head. It's not a final version because it's better to add details when doing the final polish for the whole model. On the first phase we can paint some rough light and shadows. After that add the skin colors and remove the grey tints. Don't forget that skin can be red, yellow or even green with a blue tint. It

depends on which part of the face it is. Always use a reference of a human face. I spend a lot of time searching for photos of actors or people who have similarities with the character I am working on. I also tend to slightly deform the face using Soft Selection to make everything look the way I want it to.



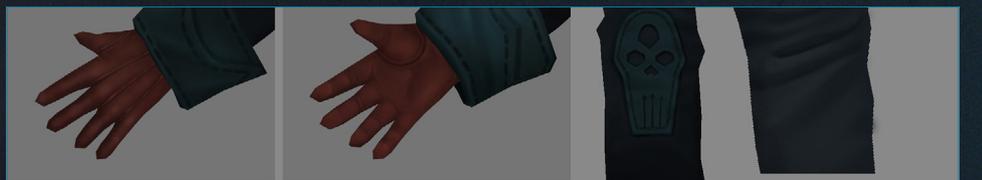
08



With this image I didn't have much of an idea about the final color choices so I started by using brighter colors and desaturated them later. It's much easier to desaturate textures than to saturate them. I drew a line and erased segments to make it look like stitches. I also added volume by adding small highlights. Don't use too many light or dark colors on large areas of your texture. It makes the texture look flat (Fig.09).



There is a small trick for lazy 3D artists like me. If you have a good and highly detailed concept you can use some parts of it for your texture. I did it for the skull pattern on the back of the jacket. I cut it from the concept and colored and refined it (Fig.10).



The shoulder pad is a complicated part of the costume. For these kinds of details I prefer to start in grayscale. I painted some simple volumes first as colors at this stage only distract me. After that I used layers in Color and Overlay mode to add the color (Fig.11).



I added additional colors to the seams, shadows and other places with one final pass (Fig.12).

on the glove. These also are metal-looking. Photo textures are a good helper if you want to learn how to draw metals (Fig.13).

The metal should be dark, not light as some artist like to have it. It is highlights that make metal look like a metal, and these highlights should be small. There are a few different tints

There is another example of lazy texturing in Fig.14.

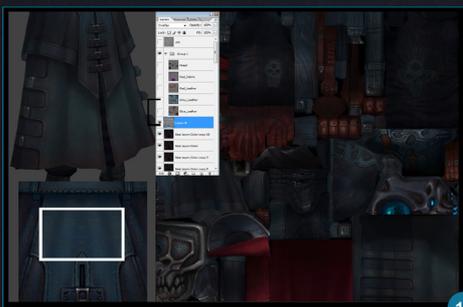
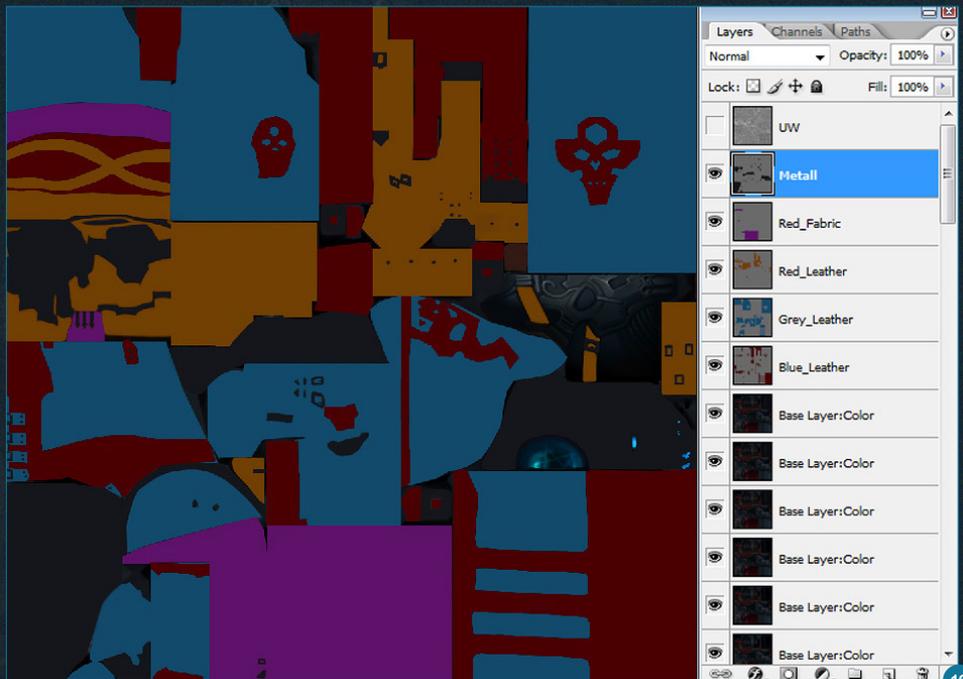


**Fig.15** shows some samples of the textures on the coat. The stitches are slightly oversized. When they are this size they are more noticeable. The leather belt was done using normal mapping and it was painted in the normal way without the use of Deep Paint.

When I finished the first pass for my textures I created a few masks for each material to use for color correction in the future (**Fig.16**).

The next step was to refine my texture. I would like to show you how the Sharpen Filter works in Photoshop. As you can see, it makes lines of light and dark pixels on the border that contrast between the darks and lights. This creates an illusion of sharp and neat detail (**Fig.17**). We'll use that filter later on the final texture, but we also need to add this effect manually on our texture. Try to paint the darker and lighter spots on the texture carefully. I added new volumes and colors at this stage as well, for example the red in the seams of the coat.

When I was satisfied with my hand-painted texture I added some photo textures. Usually they are added in Overlay mode, making good use of the masks. I made corrections using the Eraser tool. Avoid large symmetrical noise on the seams and keep in mind that dirt stays mostly in cavities. With photo textures your hand-painted texture will look more interesting, because photo textures add more colors and



noise. You can find free textures here: [www.freetextures.3dtotal.com](http://www.freetextures.3dtotal.com) or here: [www.cgtextures.com](http://www.cgtextures.com) (**Fig.18**).

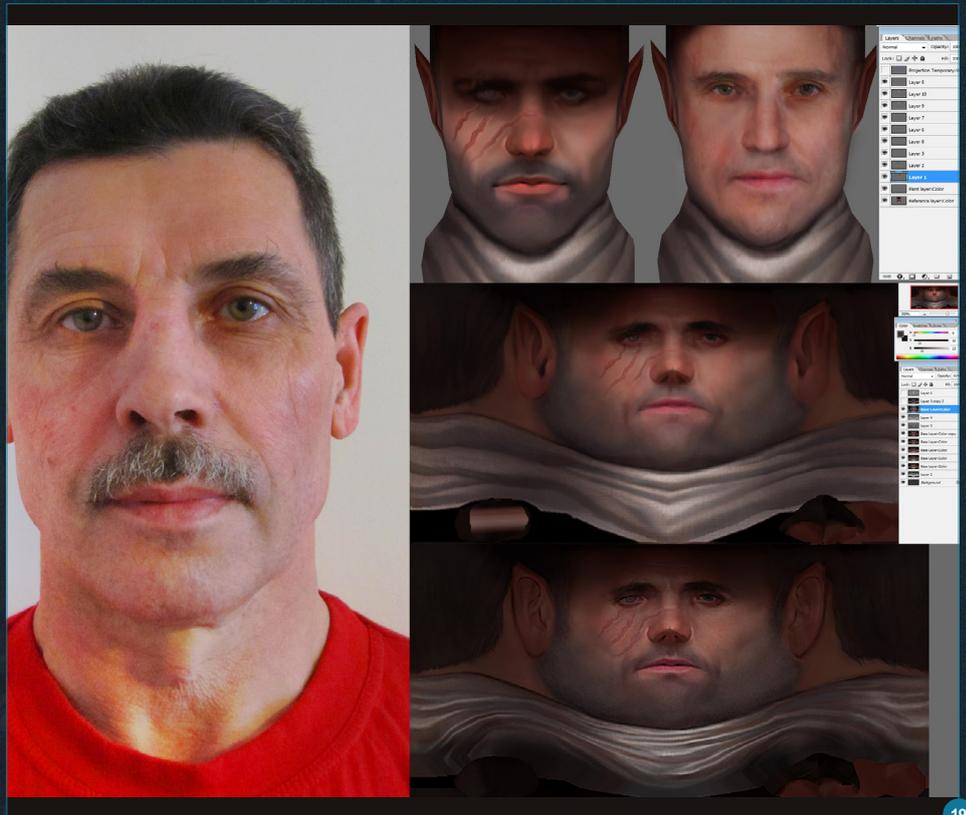
Now it's time for a final head pass. We'll use a photo texture too. You can find good photo

references for textures on the web or you can take a picture of a friend or relative as I did. Photos have to be taken with flat light (no strong shadows or highlights). You will need to adjust the color balance on the photo closer to your texture. I used a Quick Mask for each part of



the face (Q). Apply Gaussian Blur and make a selection (Q again). That selection will have a smooth clean border. Copy the eyes onto a new layer and place it on your face projection with the texture in Normal mode. Repeat that operation with the other parts: lips, nose, cheeks etc and merge them down onto your projection in Paint layer: Color (remember the layer names). Apply the projection and take that texture back to Photoshop. Carefully mix the new photo texture with the old painted texture (turn the opacity down and erase some parts). After that your texture will become more detailed and realistic. I made another pass before the final refine. I decided not to make this face too old, because the character is an elf, so I tried to combine scars, marks and clean skin (Fig.19).

The texturing on the weapons follows the same process: base, marking, main volumes, manual sharpness and photo texture (Fig.20).



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When the textures were ready I did one more thing. I exported the model into ZBrush and applied my texture there. Firstly flip the texture vertically because ZBrush has a different texturing processing. Apply the texture to the mesh and change the UV Map border to the maximum amount of 16 (UV Map menu). Press Fix Seam in the Texture map menu. Clone the texture and Import the newly created file to Photoshop (Fig.21).

As you can see, ZBrush filled all the unused space on the texture by smudging pixels to the borders. That helps us with two things; it removes the visible texture seams and makes your texture look neat. Flip back the texture from ZBrush and use the Smart Sharpen option. In Fig.22 the texture on the left shows how it looked before this was done and the one on the right after.

On the Specular map there is a big difference between the metal and other materials. The metal has super-bright highlights as it's going to look shiny in the render. The color doesn't matter much here, because Marmoset has its own specular color settings. And again the masks for different materials that we prepared before will help us a lot. I decided to make blue eyes on a Glow map because the hat casts a shadow and regular eyes were not visible on the render (Fig.23).



23

## TAMARA BAKHLYCHEVA

For more from this artist visit:

<http://first-keeper.livejournal.com/>

Or contact them at:

[tamara.salatova@gmail.com](mailto:tamara.salatova@gmail.com)

## CHAPTER 04

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# ***RENDERING AND PRESENTATION***



## RENDERING AND PRESENTATION

**Software used:** Maya, Photoshop, ZBrush, Deep Paint, Marmoset Toolbag, Adobe Premiere and Faogen

You'll probably be exhausted after working on your character for so long and you probably feel that you don't want to look at it anymore. This sometimes happens with me too, but the next part is just as important as the previous stages. It's very sad when looking at forum competitions to see potentially good entries that were ruined by poor presentation and renders. Respect your art and value the time you spent on it.

I think that the pedestal for a character has to be a piece of its environment. It can be a simple piece of rock or something that says something about your character and his occupation. At the same time though the pedestal should be simple so it doesn't distract the attention from the main character.

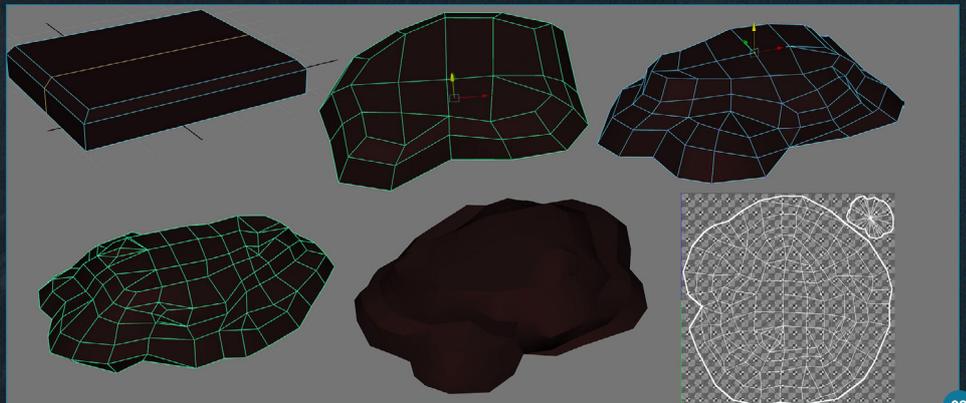
The Demon Chaser name made me think about a hunter who displays their hunting trophies. I decided that a severed demon head would be a good choice. I had no concept for this head so I spent some time just moving vertices before I created an interesting and recognizable



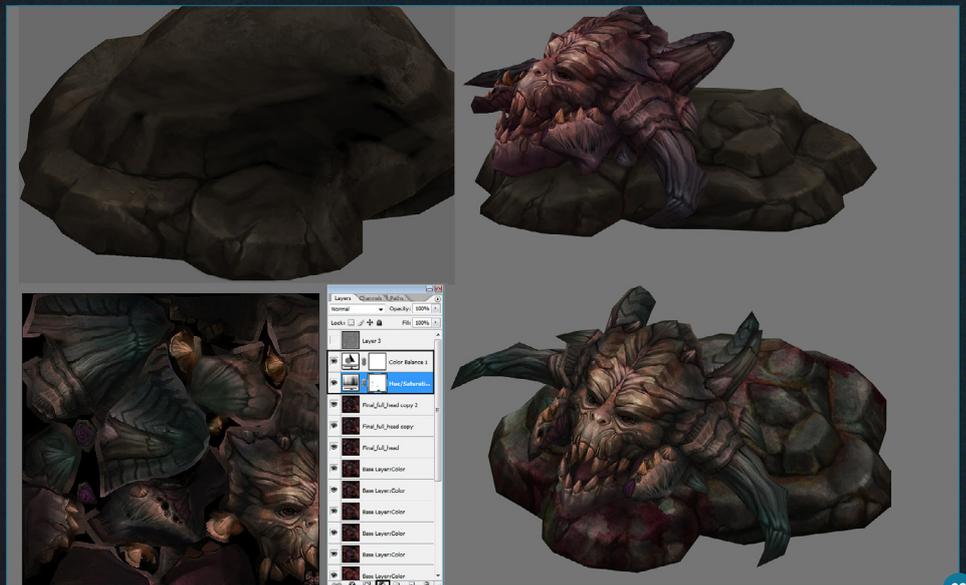
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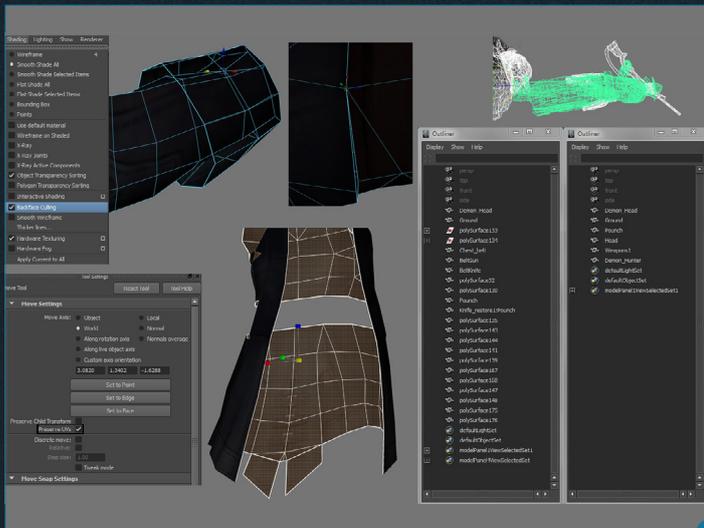
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silhouette. The first colors were too bright, so I de-saturated them. I also added some unsymmetrical details by breaking the horns (Fig.01).

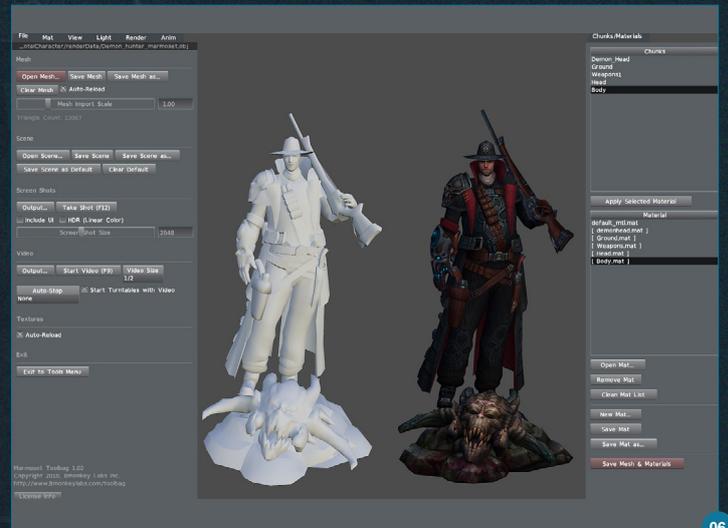
I made a piece of terrain from a simple box (Fig.02). The texture of the terrain was painted in the same way with a rough base color which then had a detail pass and photo textures added

to it. Using an adjustment layer helped match the colors of the head to those of the plinth (Fig.03).

I didn't use a rig for creating the pose, but you can if you wish. For me the easiest way to pose the character is using Soft Selection. I separated parts of the body for comfortable bending. I did two poses for some variety (Fig.04).



05



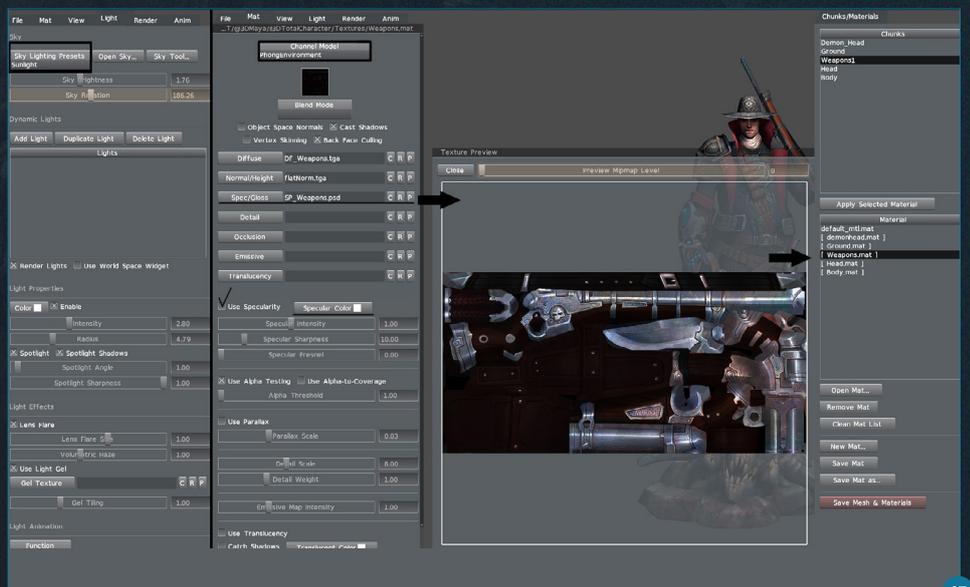
06

Preparing the model to export into Marmoset takes some time as well. I used the Preserve UVs function to maintain the texture when I moved points around. I cleaned up the outline and turned the model horizontally before exporting it (Fig.05).

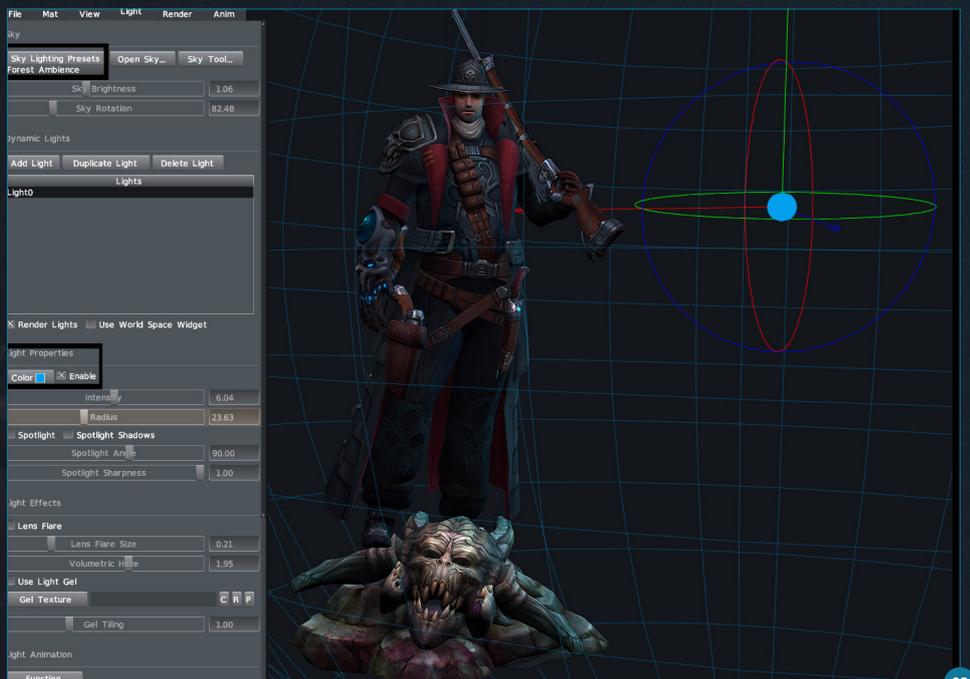
The Marmoset Toolbag is a really great tool for creating fast previews of game models (official site <http://www.8monkeylabs.com/tech/toolbag> – you can download a free trial version here). After the model is imported create a new material and name it. Select the mesh and assign the appropriate material to it. In the File menu you can set up auto-reload for the texture and mesh, which will update the texture and mesh every time that you adjust the texture in Photoshop and upload it again. That is why Marmoset is so good as a model viewer when you are painting textures (Fig.06).

Choose the Sky Lighting presets and move Sky Brightness and Sky Rotation. Choose a shader type in the Channel Model and set up the specular. You can move the sky while holding Shift. Hold Alt to rotate and move the camera and Ctrl to move and rotate the model (Fig.07).

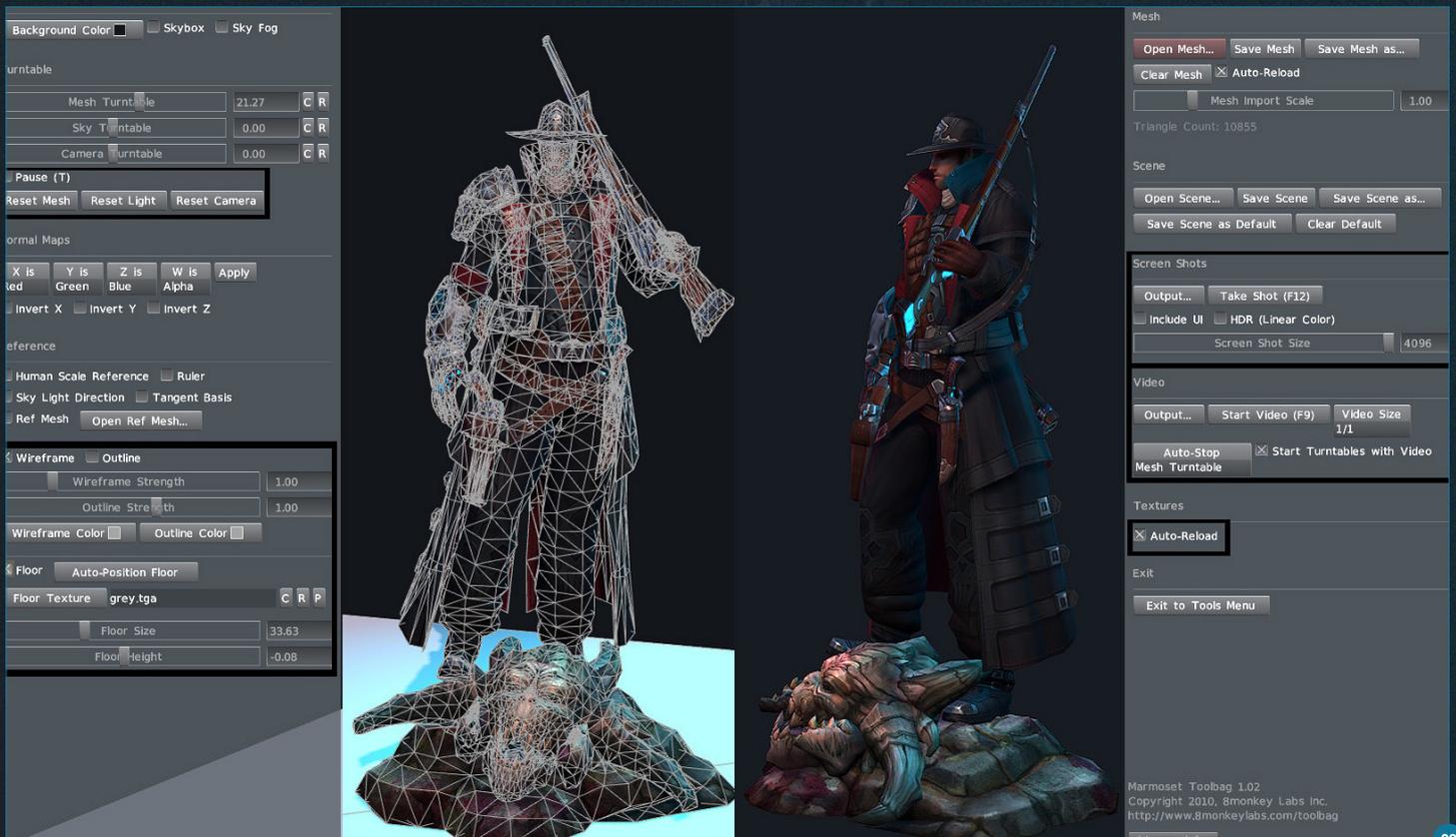
I chose the Forest Ambience preset and installed a second light. The blue light will add a rim light to the model and will make it look less flat. It will also cast intensive specular highlights on the metal parts of the model (Fig.08).



07



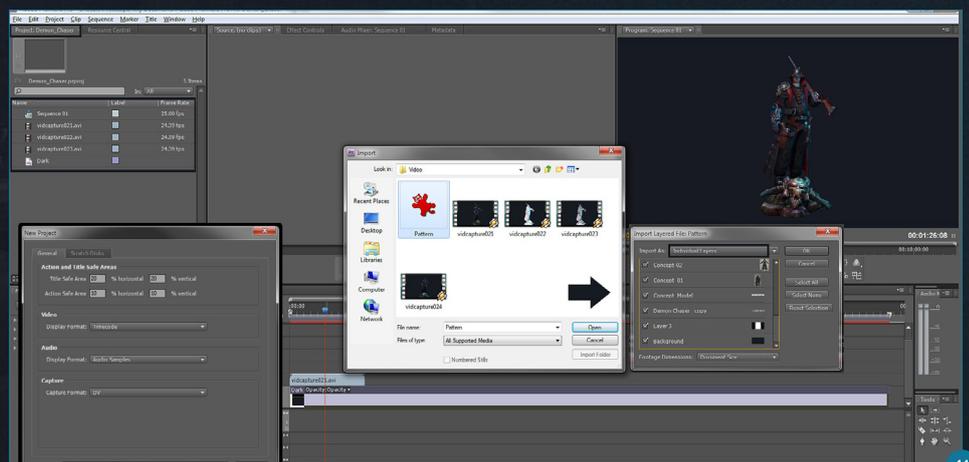
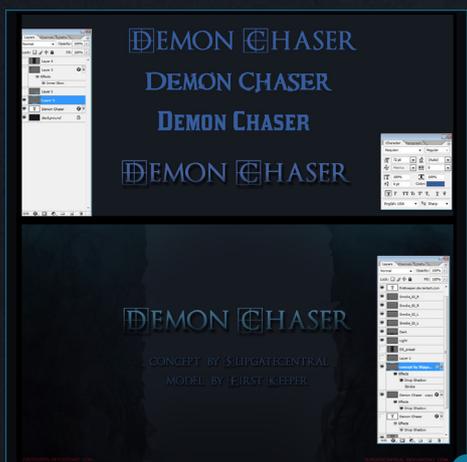
08



In the View menu I set the background color, turntable speed and wireframe. In the Render menu you can add post-effects if you wish; I only added Sharpness. For capturing video and screenshots set the output folder and resolution. I also used an Auto-stop Mesh turntable to capture the video, which stops after one full turn. To reset the model to the start position press Reset Mesh. Don't make the turntable speed to fast; it can cause some of the artifacts to appear on the video. I did three video loops and screenshots with the diffuse gray material and a wireframe (Fig.09).

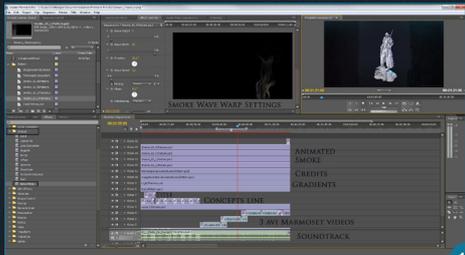
Fig.10 shows a PSD file, which we'll use for composing our turntable. The size of your file should correspond to your video's resolution. I'm going to make the video in HD resolution, so my PSD file is 1920 x 1080 pixels. I downloaded a few different fonts from an online library and picked one. It's better to use one font or two that are similar to keep everything the same style. The background color should be the same as the render's background. All gradients can be added later in Adobe Premier. All layers from that PSD can be used later for my turntable. I did two dark torn surfaces on the sides and left

a free space in the center for the model. I also put Sliggatecentral's concepts in the same file and each concept has its own layer. The first thing that you need to do in Adobe Premier is create a new project. Import your video files and PSD as individual layers. You can work with the PSD in Photoshop and add new layers later, but be careful – if you change the name or position of a layer that you have already put in Adobe Premier then it will ruin it. So I suggest adding all layers before you import them (Fig.11).



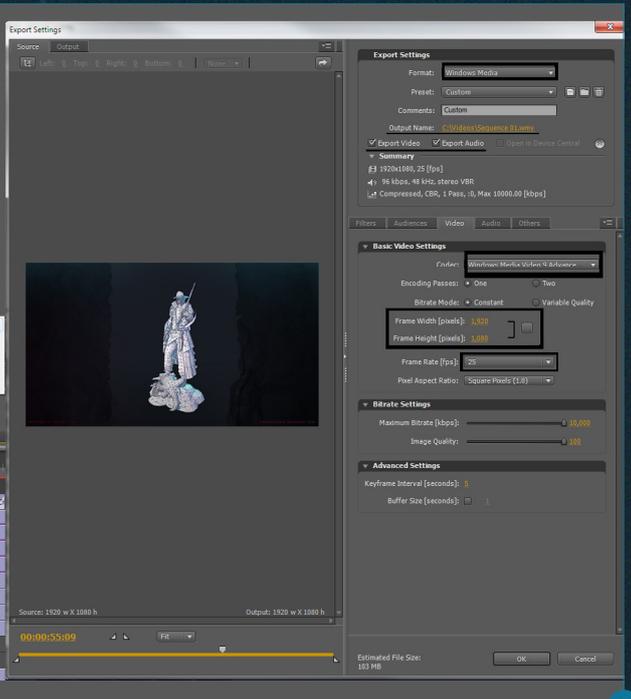
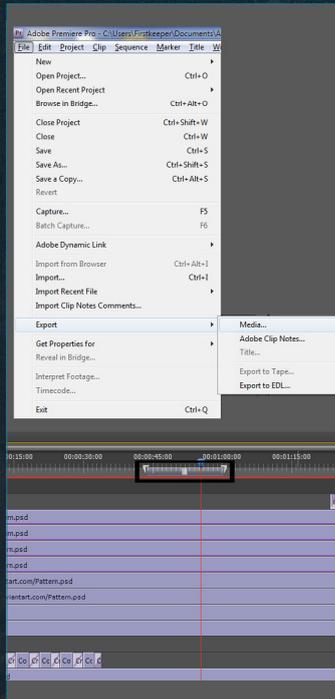


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13

Adobe Premier has a logical and simple work space. In the left window there are imported files, so it is a bit like a plate with different ingredients on it. The Timeline Zone shows the video and audio tracks. This is our table where we prepare and put together our ingredients. All you need to do is take one imported PSD layer and place it on the track. You can add, rename or delete tracks. Tracks with permanent layers like the credits and gradient go above the other layers. The background layer goes first at the bottom. We'll also use the Effects, Effect Controls and Sequence preview window. In **Fig.12** is a little demonstration of the most often used video effect: Cross Dissolve.

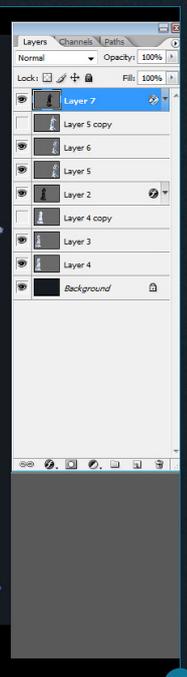
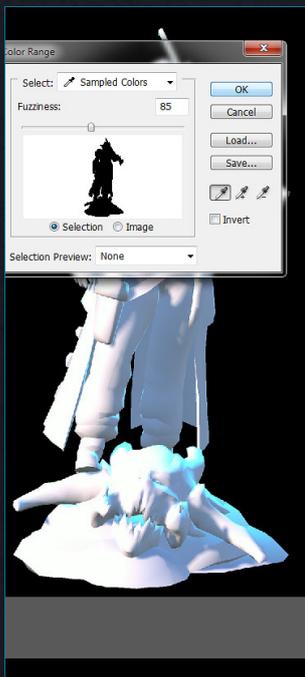


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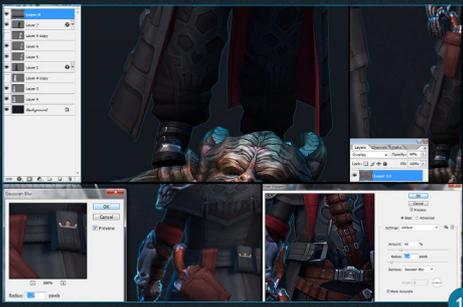
You can add a soundtrack or audio if you wish. The final touch here was to animated the smoke layers. When I imported the smoke it was in Normal mode, but Adobe Premier allows you to use Photoshop modes, so I changed it to Overlay and applied a Wave Warp effect for each smoke layer with slightly different settings. Adobe Premier has a lot of interesting effects which you can use for your own presentation; don't hesitate to study them all and find the one that suits you best (**Fig.13**).

Balancing quality and file sizes can be quite a hard process. My final settings are on the right of **Fig.14**. You can see the video here: <http://vimeo.com/19114702>.

I used the same colors and pattern presets for the final shots as I did on the video. I spent some time moving the figures around until I was happy with the presentation. I usually mix the wireframe in Multiply mode and a plain gray model for the final presentation (**Fig.15**).



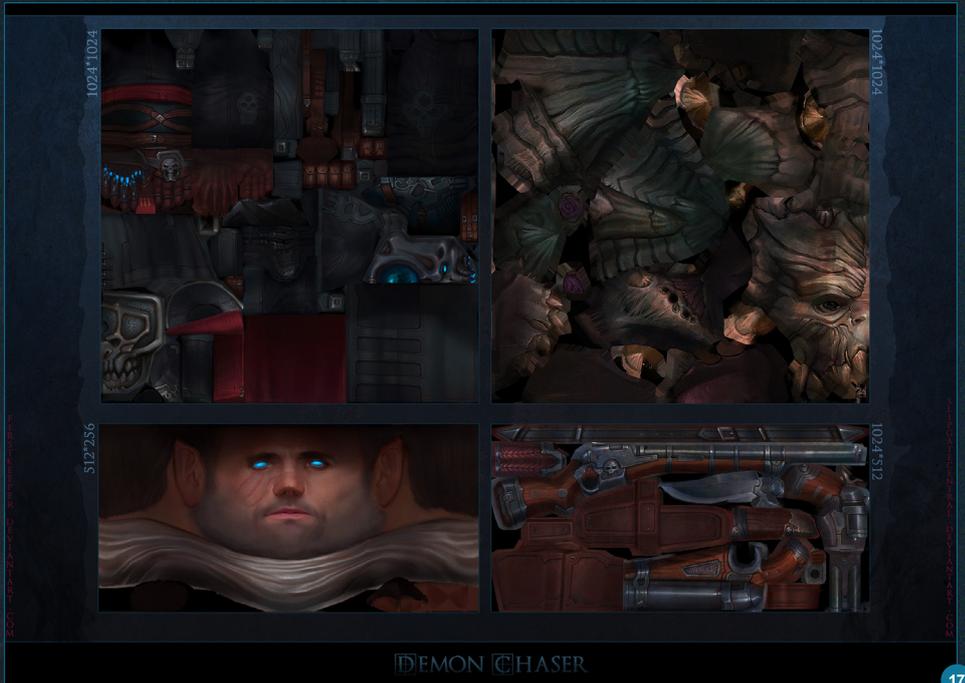
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16

Photo textures work quite well in the background. Add details to your final presentation carefully and remember your character is the main focus here. Don't let anything steal attention from your character. Bright and intensive colors in the background are not a good idea.

The final step is always to use Smart Sharpen. This operation, when used in conjunction with Blur and Sharpen, gives the illusion of depth. You can also try to do it using Marmoset post-effects. I usually do three or four shots of one pose and present it with some other shots showing technical information (Fig.16).



17

These are my final images to present in the forums (Fig.17 – 19).

Thanks for reading my tutorials! I hope you learnt something new. Special thanks go to

Vadim Bakhlychev aka Slipgatecentral (<http://slipgatecentral.deviantart.com>) for help with the text and the great concept. Many thanks to 3DTotal for their patience and for being the guys who make these tutorials happen.



18

# TAMARA BAKHLYCHEVA

For more from this artist visit:

<http://first-keeper.livejournal.com/>

Or contact them at:

[tamara.salatova@gmail.com](mailto:tamara.salatova@gmail.com)



# DEMON CHASER

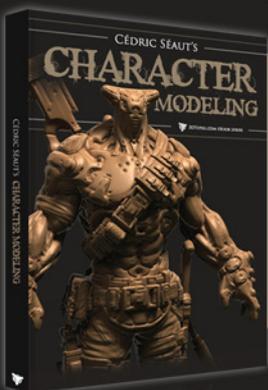
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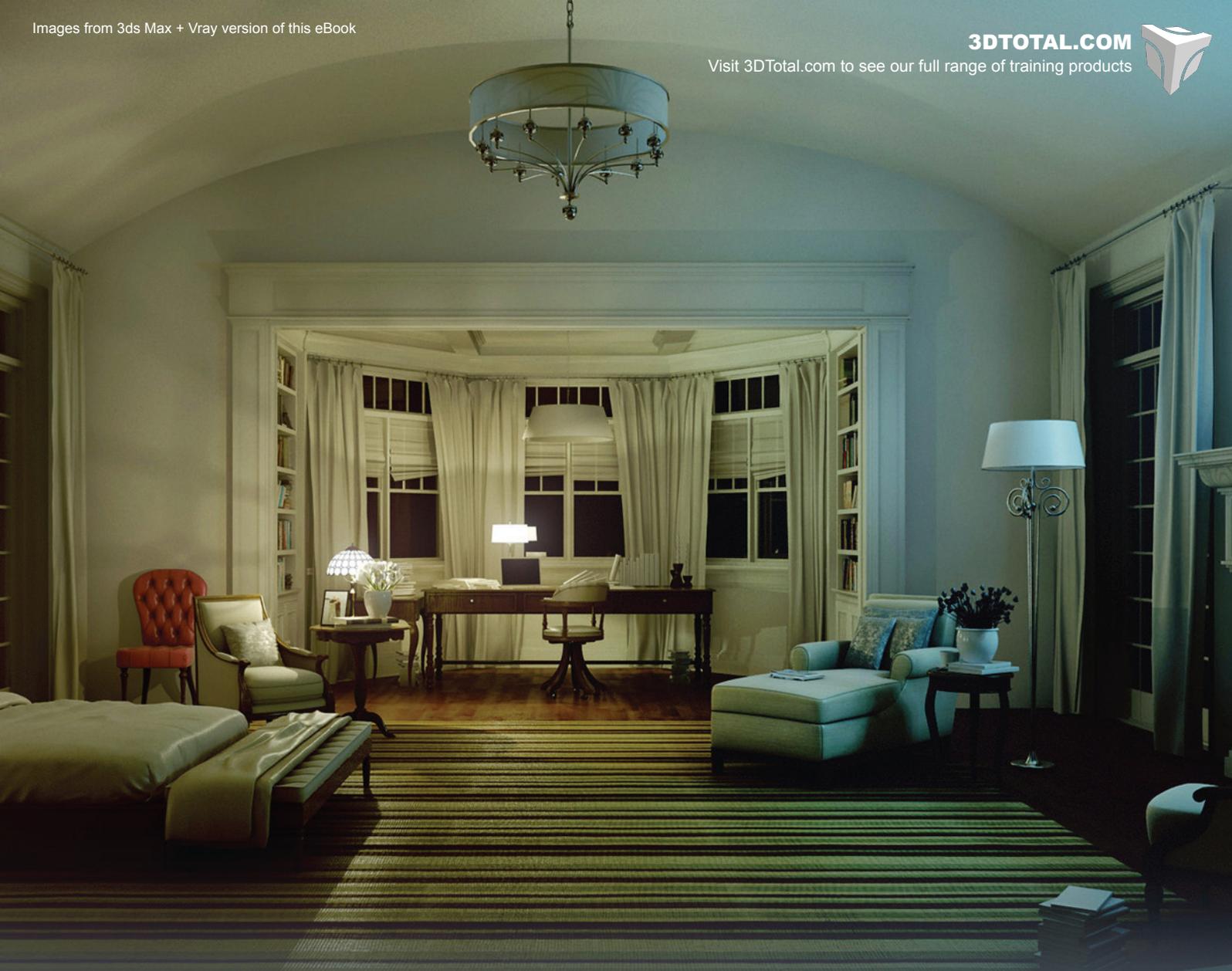
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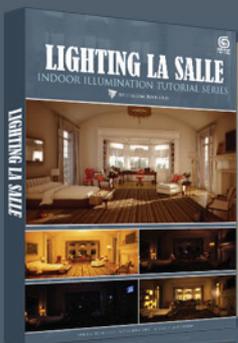
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# LIGHTING LA SALLE

## INDOOR ILLUMINATION TUTORIAL SERIES



This five part series will focus on the topic of setting up a variety of lighting rigs that reflect natural lighting at different times of the day and manmade interior lighting. Each of the chapters will use the same base scene as a starting point, and will show a step by step guide to finding a lighting and rendering solution that best reflects the desired lighting situation. The tutorials will explain the type of lights used and how to set up the parameters along with talking about the different methods of tackling the subject. The manipulation of textures may also be covered in order to turn a daylight scene into night scene for example.

Original Author: 3DTotal.com Ltd | Original Scene by: Viktor Fretyán | Format: DOWNLOAD ONLY PDF

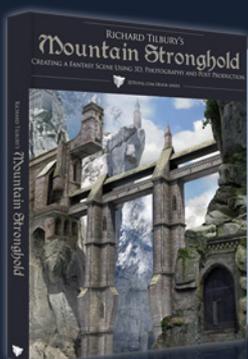


RICHARD TILBURY'S

# Mountain Stronghold

CREATING A FANTASY SCENE USING 3D, PHOTOGRAPHY AND POST PRODUCTION

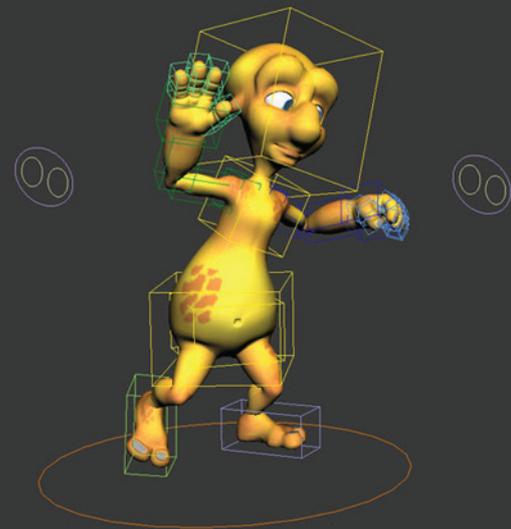
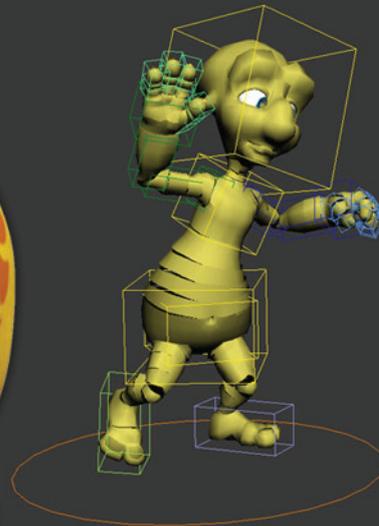
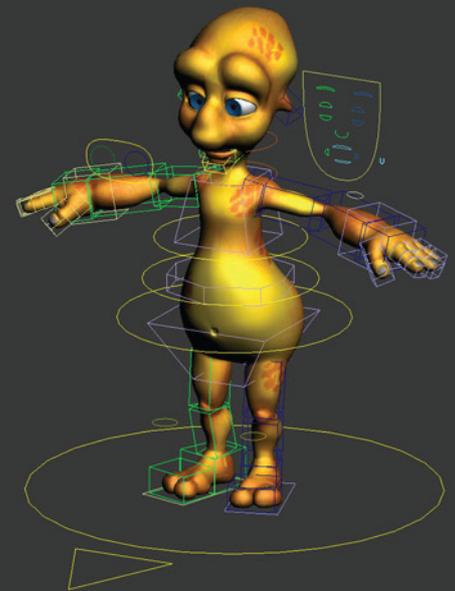
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Using 3ds Max and Photoshop this eBook teaches you how to create a fantasy scene inspired by real world architecture, and how to correctly and effectively use reference photos of your chosen source of inspiration to get stunning effects quickly and easily.

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Original Author: 3DTotal.com Ltd | Platform: Suitable for all 3D software | Format: DOWNLOAD ONLY PDF

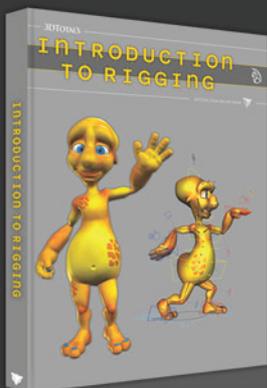


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# INTRODUCTION TO RIGGING



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The aim of this eBook is to show and explain how you might tackle rigging your 3D character for animation. The six chapters within this eBook will give help and advice to novices and experts who are looking to build on their rigging skills or approach rigging for the first time. The series gives a detailed step by step guide as to how to approach rigging but also shows us how to tackle common problems and issues that regularly occur even in a professional environment. The artists will be reflecting on working in the industry as well as talking us through their individual approaches to creating the best rigs possible.

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3ds max



lightwave



modo

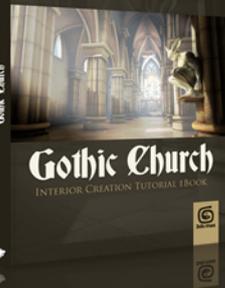


# Gothic Church

INTERIOR CREATION TUTORIAL EBOOK

This e-book provides a detailed account of building, texturing and lighting the interior of a Gothic Church based upon a concept painting. The ebook is available in five different platforms. Chapter two however is dedicated to creating a gargoyle in Zbrush – the focal point in our scene. Here the author will start by creating a rough body form using ZSpheres and move through the numerous sculpting phases and modeling the details for each part of the character, highlighting the various brushes and tools used throughout.

Original Author: 3DTotal.com Ltd | Platforms: 3ds max, Cinema 4d, LightWave, Maya and Modo.  
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**Bonus Sculpting Chapter, FREE Gargoyle model & 51 Total Textures Included**

