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# Building 3D Models with modo 701

Learn the art of next generation 3D content creation with  
step-by-step instructions from a real-world pro

*Foreword by Peter Stammbach - modo YouTube guru*

**Juan Jiménez García**

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with step-by-step instructions from a real-world pro

**Juan Jiménez García**



BIRMINGHAM - MUMBAI

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# Foreword

Dear readers, starting to work with powerful and complex software of any kind may be a reason for countless moments of frustration. Although modo from Luxology is a modern application with a beautiful and streamlined user interface, the new-user-frustration aspect is not new. If you want to avoid these moments and shorten your learning curve dramatically, then you have come to the right place. Juan Jiménez shares his experience, and will help you to quickly be productive and not waste time fighting the tool. His workflow has been tested and iteratively refined in many real-life projects. Be it cars, furniture, machinery, interior architectural design and visualization, or many other areas, Juan covers a broad range in the computer graphics world. This book is not about theory, it is about how to achieve results, get the job done, and meet deadlines. Only years of experience, intense and passionate use of this great software for a long time, can lead to a book like this. I wish I had access to such a source of inspiration when I started to work with modo. It would have shortened my learning curve a lot as well.

**Peter Stambach,**

modo YouTube guru, Switzerland

Peter's YouTube Channel: <http://www.youtube.com/user/stammpe2>

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# About the Author

**Juan Jiménez García** started to doodle with 3D software back in 2004, with Lightwave 6. He then started to specialize in modeling, specially hard surface modeling, such as cars, furniture, all kinds of machines and engineering related stuff, and so on. He joined a small broadcasting company in his town, as a camera operator, and in charge of all CG imagery. He also started to explore CG for architectural works. In his spare time, he joined forces with some video game modding groups dedicated to driving simulations, modeling several racing cars for games such as Rfactor and Nascar Racing.

Once he left that company during the middle of 2012, he started to try to make himself visible in the field of interior design, offering visualization services for interior designers. He then opened his own webpage [www.factor3d.com](http://www.factor3d.com), and brand named *Factor3D*, which he still develops in the market of CG visualization for several customers in his area, conducting live workshops, and giving private formation with the help of some old work companions, launching a formation center in his town to promote the use of modo.

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Many thanks to David, the guy who put a copy of Lightwave in my hands back in the old days and fed my passion for 3D art.

Many thanks to Newtek for developing my beloved Lightwave, which made me learn the basics of 3D imaging.

Many thanks to Brad Peebler and the rest of the guys from Luxology for producing such state of the art piece of software like modo. You guys rock.

Many thanks, finally, to the modo community, who are always giving help to complete strangers willing to learn this awesome software, and for helping me more than I expected, as I now want to help others by writing this humble book.

---

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# About the Reviewers

**Oliver Caiden** is a compositor working at MPC in London.

**Martin Kupski** is a digital artist who lives in Malmö, Sweden, and was born in 1986. He has worked in the VFX field for several years on everything from small commercials, to big Hollywood productions. He learned the basics at a SOFE (School of Future Entertainment) and honed the skills with the help of tutorials and experience.

Martin has had a lot of different roles, but the skills he has developed the most are Matte painting, compositing, and 3D modeling.

Martin has worked as a freelancer for most of his career. The companies he has worked for include Ghost, Dneg, Postyr, and Gimmick to mention a few. Recently, he has also been teaching the art of Matte painting at Campus i12 in Eksjö. At the time of writing, Martin works at an animation studio called Wilfilm in Copenhagen, as a generalist.

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I would like to thank my girlfriend Anna, and my family for their support.

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**Antonio De Lorenzo** is 46 years old and has been working in the CG industry for over 20 years. He is the co-founder of an Italian company called the *Imago Edizioni*, with his brother Francesco De Lorenzo. They publish magazines, books, and lead as editors, a CGI portal ([www.imaginaction.com](http://www.imaginaction.com)), with forums for the 2D and 3D graphics community in Italy. He has translated four books about ZBrush, and other three for 3DS Max from English, and other graphics packages. He teaches CGI to universities and private schools, and works as a school manager, supervisor, and coordinator for some 3D courses, and as a teacher for single 3D matter too.

Imago Edizioni makes the production betatester for a lot of worldwide 3D packages, and is active in 3D production, including still images and animations for various 3D visualization fields, from Medicine to TV, from Architecture to Jewel Design and Digital Nature.

**Charles Wardlaw** is a Character Technical Director for film and television, including work on *Resident Evil: Retribution*, *Mama*, and *The Mortal Instruments: City of Bones*. He uses Python and C++ for creating custom rigging solutions to solve problems and facilitate animator workflows, and enjoys the challenges present in each new script. In his off hours he enjoys photography, watches cartoons from the 80's, attempts to draw, maintains the tradigiTOOLS animation plugin for Maya, for FUNhouse Interactive, and teaches his daughter how to box.

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I'd like to thank my wife for being the most amazing and supportive woman I've ever met.

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# Preface

There are always a lot of people asking me very basic questions about my work in 3D art.

Sadly, learning how to use 3D software can be tedious and difficult, especially if you base your advances in self learning, which can imply double the effort. This book will focus on those kind of people who want to grow their skills in Luxology modo, but find the information about this software sometimes too hard to find or too technical for a beginner.

As that was the case when I started developing my skills in 3D art, I want to help others to understand the basics of this great piece of software, as I wanted to have in my early days. So, what you will find here is less technical information, and more practical definitions and examples, straight to the point and without unnecessary and confusing terminology.

I hope you all enjoy this book the same way as I enjoyed, writing it for you.

## What this book covers

*Chapter 1, Knowing the Interface*, introduces the general use of the software's interface.

*Chapter 2, Beginning with Modeling*, will teach the use of the modeling tools.

*Chapter 3, Texturing and Materials*, covers the use of textures and materials as we see them in the real world.

*Chapter 4, Illuminating a Scene*, explains the use of different types of lights and illumination techniques.



*Chapter 5, Preparing a Shot*, covers many good practices to be carried out at the time of taking a picture of your scene.

*Chapter 6, Rendering your Scene*, will teach you how to set up your scene to get the best results.

*Chapter 7, The Post-production Phase*, covers a great number of methods to enhance your final render.

## What you need for this book

You will need the following for the book:

- Luxology modo 701
- Adobe Photoshop CS3 or higher

## Who this book is for


People looking for an introduction to the world of 3D art, newcomers, or those with a little knowledge of using 3D software in general, or Luxology modo in particular.


## Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text are shown as follows: "I renamed mine to `depth`."

**New terms** and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "and a third button called **RAY GL**, which is off by default".

 Warnings or important notes appear in a box like this. ]

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# 1

## Knowing the Interface

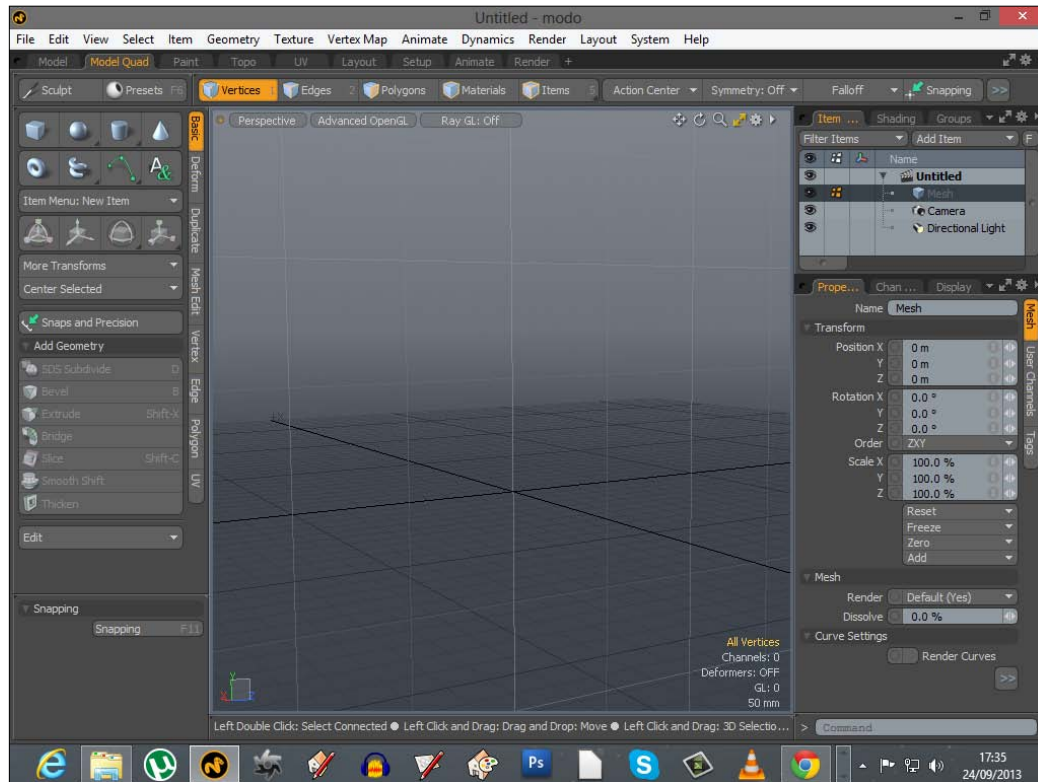
Before we put our hands on the software, let's spend a few minutes learning how modo is organized so that we can use its features wisely. Learning how modo works as a whole can help us optimize our workflow. So, double-click on your modo shortcut and let's see what's in there.

In this chapter, we will cover the following aspects:

- Using the viewports
- Working with tabs
- Understanding the tools panel
- Understanding the info panel
- Working with the selection methods

## Using viewports

If you have some previous experience with 3D software, you will notice a typical 3D interface and a big workspace showing a single perspective view surrounded by a bunch of buttons. If you are new to all this, then it's time to explain what this is all about.



First of all, take a look at what will be the main workspace you will be using. A single perspective visor occupies the main part of the screen. That's a perspective view of your model. If you look at the top of it, you will see the information you need to identify it.

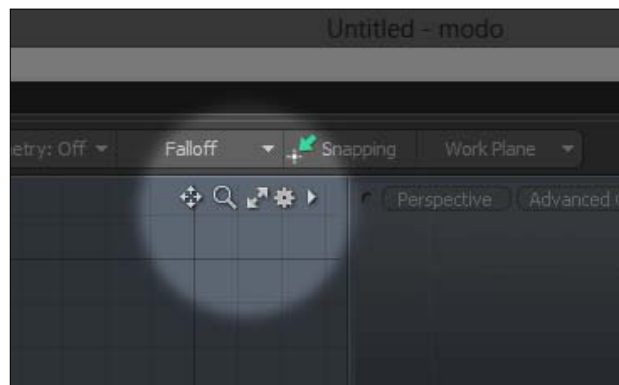
This information is divided in to two parts: information about the visor and how it displays the view (in the left-hand side corner), and general controls for zooming, panning, and rotating the basic stuff. You can see three big buttons in the left corner of each visor (giving information about the view represented, the kind of display it is showing, and a third button called **RAY GL**, which is off by default). We will see the RAY GL mode later on, since it's related to the rendering phase, but it's important to know about the other two.

For the first button, you will notice there is a difference in each viewport. I'm sure you have guessed the meaning of it. It's telling you what view you are seeing in each one. That's **Top** for the top view, **Perspective** for the perspective view, and so on. We will see their uses in the customizing part.

These viewports (and the layout of viewports) are customizable, as we will see later. But for now, just know that you have all the information for the visual control of your scene.

## Controlling the viewports

Let's focus on controlling the viewports. Viewports are not fixed in any way. You can manipulate them, change their size, position, maximize/minimize them, change their properties, and so on. That's what the control area – on the top-right of each visor – is for. Since this section will talk about controlling the viewport, we will cover the use of the top-right controls.



If you look at the previous screenshot, there are a number of icons, some of them very clear about their function and others not. Let me explain what each of them do:



The panning tool

The first icon is for panning. You can click-and-drag this icon to pan over the image.



The rotating tool

The second is for rotating. Click-and-drag over this icon to rotate the image. Of course, this button only works in a perspective or camera visor, since the rest of the views are unable to rotate, due to its very nature.



The zooming tool

The third is the zooming control. Again, click-and-drag left or right to zoom in and out.



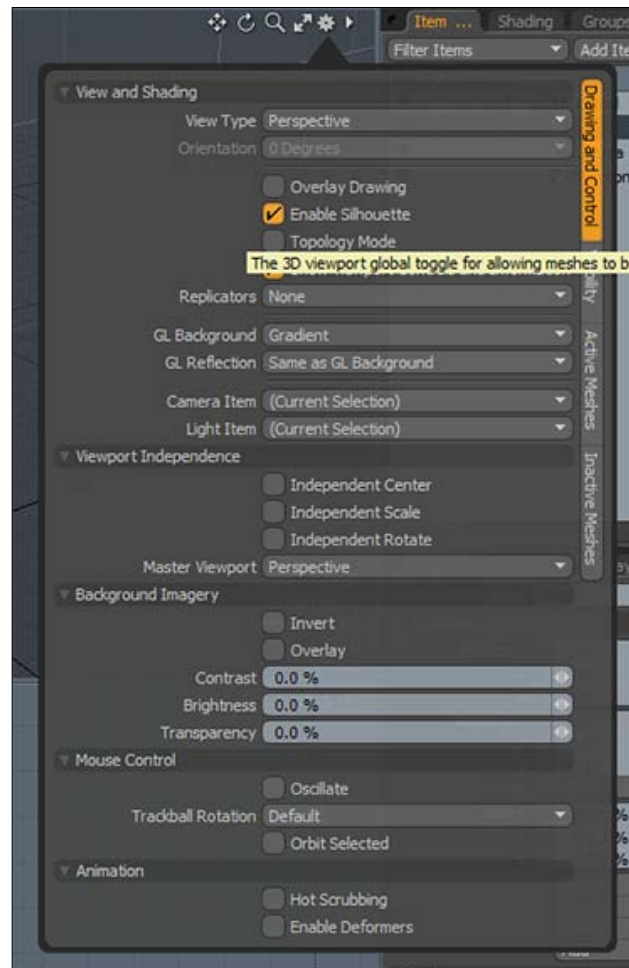
The maximizing tool

The fourth is the maximize button. Nothing fancy here. Just click on it and the visor will expand to occupy the whole workspace. Click on it again to return to the previous viewport setup.



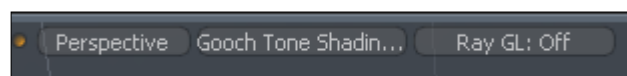
The options button

The fifth (the one shaped as a gear) is the options button. If you click on it, a menu will show up with all the options you need to customize that particular visor. It's divided into tabs, each one related to particular aspects of the visor. You can change things such as visibility of the wireframe, colors, mesh displays, and backgrounds. But for now, and being an introductory explanation of the interface, my advice is that you don't mess too much with this menu. The standard values should be good for you. Anyway, feel free (and it's a good thing) to experiment with some of these options to see the effect on the display of the viewport.



## Customizing the viewport quad

Now that we know how to control the views, we can move on to the next step, which will be customizing the viewports as per our own likings.





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