

Shapify

Scan@Home

User Guide

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Getting Started

Shapify.me is both an application for scanning the human body in 3D and a web service for ordering a printed figurine from the 3D data obtained. The application has been developed to work with *Microsoft Kinect 3D* sensor.



Figure 1: Microsoft Kinect sensor

System Requirements

To start with **Shapify.me** you need a computer which meets the requirements below and *Kinect* sensor. See the following table:

Minimal	Recommended
<i>Microsoft Kinect</i> for Windows	
Windows 7 x64 bit or later	
Intel Core i3	Intel Core i7
4 Gb RAM	8 Gb RAM
Integrated Graphics Card	Discrete Graphics Card
Audio Speakers	
USB 2.0 port	
Internet connection	

Table 1: System requirements

Software Installation

1. Download the latest version of the application at www.shapify.me.
2. Launch the downloaded file and install the *Shapify.me* software (see [figure 2a](#)).
3. Install *Kinect for Windows SDK* by clicking the button from the dialog that opens (see [figure 2b](#)) while installing the application. You will be redirected to the Microsoft site. Download and launch the executable file. Once SDK is installed, the *Shapify.me* installer window opens, prompting you to complete installation.

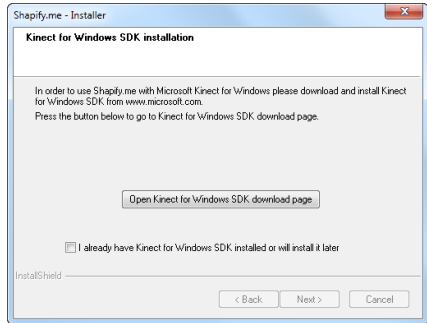
Hardware Installation

1. Place the *Kinect* sensor roughly at chest level, but no higher than 1.2 meters (3 feet 11 inches) ([figure 3a](#)). You can place the sensor at the edge of a desk, putting a little pile of books under the device, or just use a tripod.

Note! *Tips for best scanning results can be found in [Appendix A](#).*



(a) License Agreement



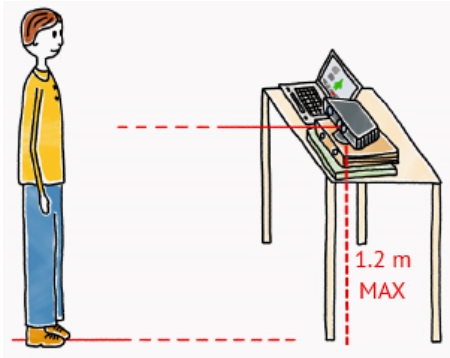
(b) The dialog prompting to install *Kinect for Windows SDK*

Figure 2: Installation process

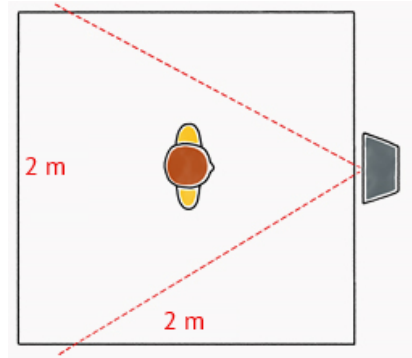
2. Prepare a scanning site in front of the device (figure 3b). Remove unwanted objects from an area of about 2x2 meters (6.5x6.5 feet). Make sure there is no wall crossing this site.
3. Plug the sensor into a power socket and connect it to the PC's USB port.
4. Set up good lightning for the scanning site following the recommendations listed below and consulting the figures shown in Appendix A:
 - Use bright natural light for best results.
 - If using artificial light, avoid using fluorescent lamps.
 - Make sure there is no direct light, either artificial or natural, shining on the person to be scanned or the *Kinect* 's cameras.

System Limitations and Tips on Scanning

- You can take any pose you like. You can stand or sit, but you cannot lie down. Note that you should be able to keep the chosen pose 8 times for not less than 10 seconds each. You may need to practice if you chose a difficult pose.



(a) How to set up the *Kinect* on a desk



(b) Scanning site

Figure 3: The *Kinect* sensor and scanning area

- Stand with your legs slightly apart, so that they will not end up stuck together in your scan.
- Avoid thin objects. Fingers, umbrellas, pointers, chair legs and other objects will not be recognized by the *Kinect* as separate elements. There may also be some issues with printing them, even if the *Kinect* does pick them up.
- Avoid transparent objects. Glasses should be taken off before scanning.
- Avoid shiny objects. If you are wearing shiny shoes, use anti-glare spray.
- You can scan a couple of people together, but please be aware of the double cost of printing the figurine, due to the increase in material. We recommend using a turntable so that both people are able to hold their positions without difficulty.

Scanning

Scanning using *Shapify.me* is a simple and intuitive procedure. You just stand in front of the *Kinect* and pay attention to the voice instructions. Hold your pose and turn when asked. When you turn, the sensor scans you from different angles. The scans are then used to produce your 3D model. You come full circle after making 8 turns in 45 degree increments, as shown in [figure 5b](#). To scan yourself, please follow these steps:

1. Run the application.
2. Specify your approximate height by clicking the [Settings](#) button and using the [Height](#) slider.

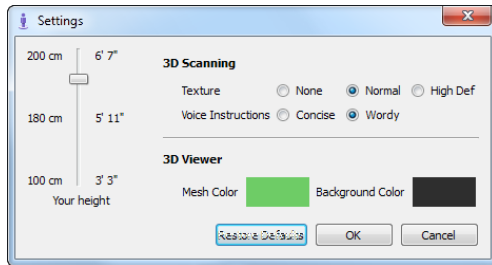


Figure 4: *Settings* dialog

3. Adjust the rest of the options if necessary. You can opt for concise instructions, disable texture on the scan and adjust the color used when rendering the model.

4. Make sure your sensor is set up correctly (see [Hardware Installation](#))
5. Press the [Capture](#) button to start scanning.
6. The program will show you where to stand by indicating a green zone. (figure 6a).
7. When you hear "Now hold still, keep the pose...", you should not move until the next command. The *Kinect* will begin scanning you (figure 6b).

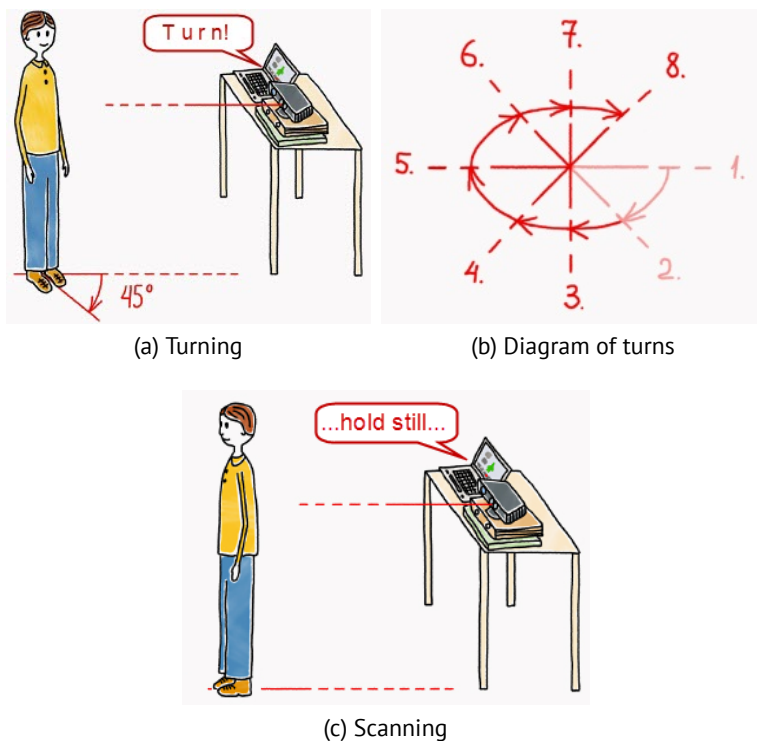
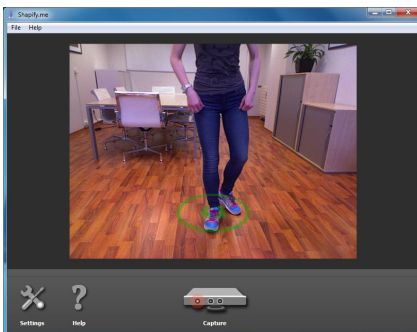


Figure 5: Understanding scanning and turns

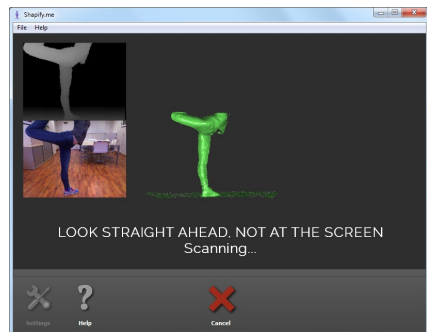
8. When you hear the instructions telling you to turn, turn 45 degrees

clockwise (figure 5a), take up your chosen pose and facial expression again, and get ready for the next command telling you to hold still. You have between 6 and 8 seconds to turn, depending on the *Voice Instruction* setting you chose (figure 4).

9. Make a total of 8 turns (figure 5b) by following the voice instructions.
10. Once the *Kinect* has finished capturing your 8th position, you can relax. Wait a few minutes for the processing to finish.
11. Once the processing has finished, the application starts uploading it to the www.shapify.me website.
12. When uploading has been completed, the program informs you (figure 7) that your model can be viewed in the browser (figure 8).
13. If you do not like the model, click on *Scan again* and repeat the procedure.



(a) The green mark indicating where to stand



(b) Scanning

Figure 6: Scanning

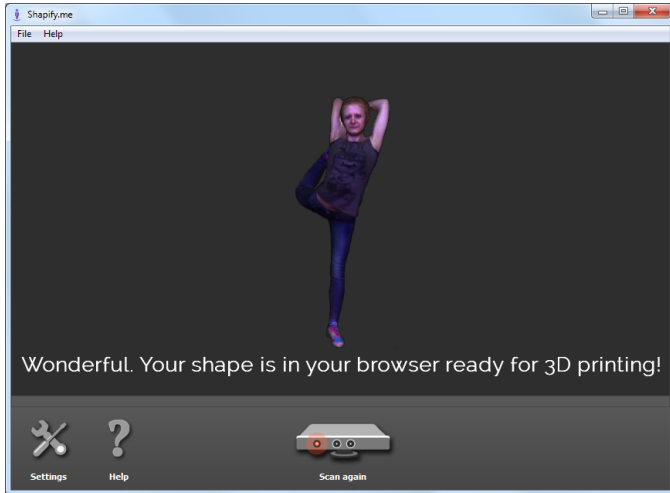


Figure 7: The model has been processed and uploaded

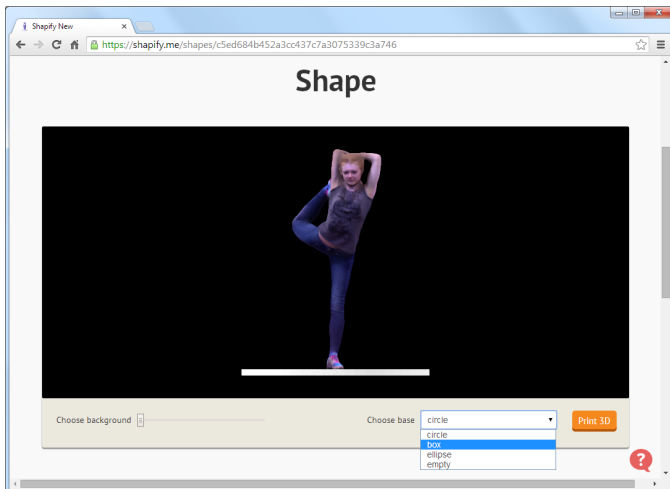


Figure 8: 3D model on the web

Ordering 3D Prints

Once you have been scanned and your model is uploaded to the www.shapify.me website, you can order your printed figurine.

Scale	Dimensions	Material	Options
1:20	7-10 cm (2.7"-3.9")	polyamide	white/colored

Table 2: Characteristics of the 3D printed figurines

1. Using the left mouse button, rotate the model in the browser ([figure 8](#)) and take a close look at it.
2. Select the base for your figurine from the dropdown list (circle, box, ellipse or empty) (see [figure 8](#)).
3. Click the [Print 3D](#) button to order a 3D print of the model. The model will be added to the cart.
4. Scroll up the page and click [Cart 1](#). The *My cart* page will open, displaying your figurine and ordering options. Check the *Quantity* field and select the required *Material* from the dropdown list.
5. Click [Log in to continue](#) in order to proceed with your order. In the window that opens you can sign up by filling in the registration form or sign in if you are already registered.
6. Fill in the purchase form, providing payment and delivery information. Look through the Terms of Use, Privacy Policy and EULA, select the checkbox and click [Purchase](#).

Troubleshooting

Issue / Message	Possible Reasons	Possible Solutions
<i>"Network problems detected. Checking for new updates"</i>	There is no Internet connection or a fire-wall may be blocking the connection.	Check your internet connection and fire-wall settings to unblock the application.
<i>"Scan error. Please setup the Kinect position properly."</i>	The <i>Kinect</i> was not correctly set up.	Make sure that the scanning space in front of the <i>Kinect</i> is uncluttered and that there are no large objects, such as a wall, right behind you. Stand in the green zone as shown on the screen.
	The <i>Kinect</i> was set too high for the person's height and in its upper position the sensor cannot see the person's shoulders.	Set up the <i>Kinect</i> approximately at chest level, but no higher than 1.2 meters (3 feet 11 inches)

Issue / Message	Possible Reasons	Possible Solutions
<i>"Scan error. Please check your Kinect connection"</i>	The <i>Kinect</i> is not plugged into the USB port, or there is an issue with the USB 3.0 port.	Check the USB connection. Try using another USB port. Note that depending on the version of your <i>Kinect</i> , it may not work properly with a USB 3.0 port.
<i>"Something went wrong. Let's scan again."</i>	You may have made less than 8 turns, perhaps you did not turn 45 degrees, or maybe you did not hold your pose properly.	Scan again, remembering to turn in 45 degree increments and to hold your pose. There should not be any unwanted objects in the <i>Kinect's</i> field of view.
<i>"Repeat the same scan again"</i>	You may have made a sharp movement while being scanned or unwanted objects may have appeared in the scanning zone. Or your PC might not meet the requirements for using the <i>Shapify.me</i> program.	First make sure that your PC meets the requirements stated under System Requirements . When scanning, avoid sharp movements and unwanted objects in the scanning zone.
Processing takes a long time (about 30 minutes)	There may have been other objects hindering the <i>Kinect's</i> field of view.	Clear away these objects.

Issue / Message	Possible Reasons	Possible Solutions
	You chose a pose so strange that <i>Shapify.me</i> did not recognize you as a human.	Try a new pose and scan again.
	The person being scanned is wearing large, voluminous clothes, e.g. a big bulky coat. Or you are scanning two people.	This is normal, you just need to wait. The larger the object being scanned the longer the processing will take.
	The ceiling in the room where you are scanning is too low.	Lower the <i>Kinect</i> or try to scan in another room.
	Insufficient RAM and/or low CPU performance	Close unnecessary applications. Upgrade your personal computer, if possible.

Appendix A

Getting prepared: examples

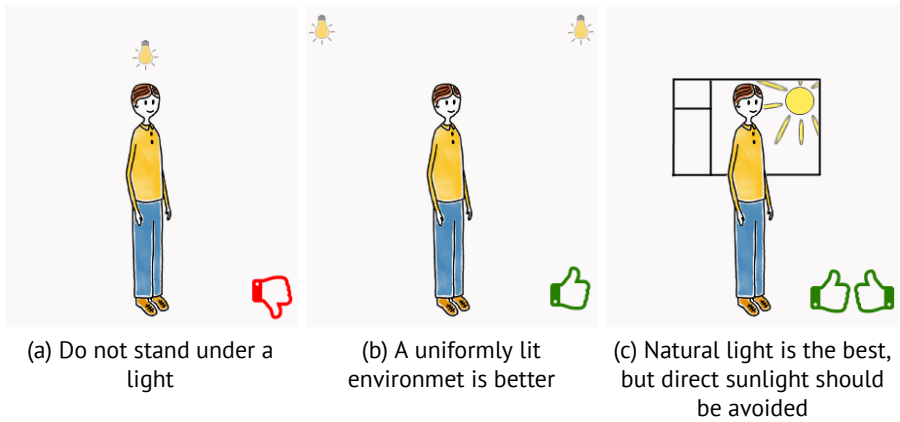
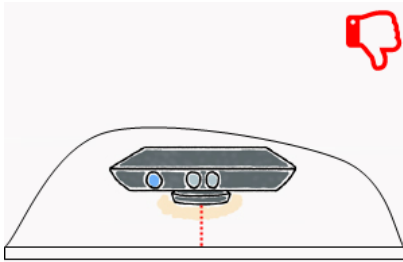
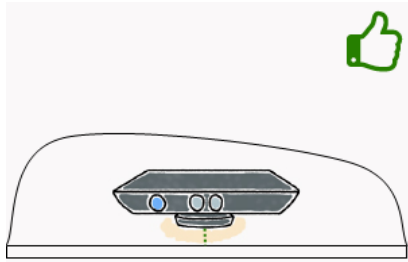


Figure A.1: Lighting conditions



(a) Bad position: the sensor's view is blocked by the desk



(b) Placing the sensor at the very edge of the desk may improve the situation



(c) For best results, use a tripod

Figure A.2: Where to set the *Kinect* sensor

