

BOOK COVER TEMPLATE

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Introduction to Motion Capture (Rokoko)

My name is Matthew De La Nuez, a recent Digital Multimedia Design graduate who has been using the Rokoko motion/face capture technology in Blender and Unreal Engine. In this course material there will be guidance and tutorials on using the Rokoko suits as well as motion capture tools in general. Motion capture is a powerful technology that has been used by big studios for film, games, and more for over 2 decades. This technology has now started to become more affordable and compact for smaller studios and independent artists to use such as Rokoko motion capture suits. I will be covering suit setup, Blender tutorials/workflow, and Unreal Engine tutorials/workflow but this technology can be difficult to work with especially if you're not tech literate so be aware of this.

Hosting on Github Pages

1. Fork this repository
2. Create a branch called `gh-pages`
3. Enable Pages to deploy from `gh-pages` branch.
4. Make sure Actions have permission to run on this repo. `gitbook_action.yml` workflow will automatically publish a Gitbook on the `gh-pages` branch.

Updating a new book

Modify the following files:

- Configuration settings: `book.json`
- Table of contents: `SUMMARY.md`
- `cover.jpg`, `cover_small.jpg` (`cover.jpg` is published as the cover image in the PDF export generated by `.github/workflows/gitbook_action.yml`)
- `LICENSE.md`

Installing gitbook cli

Requirements: NodeJS v4 and above

```
npm install -g gitbook-cli
```

Local development

Install local development dependencies: `bundle install`

Install gitbook plugins: `gitbook install`

Build the static website using: `gitbook build`

Build and serve on localhost: `gitbook serve`

Note: PDF and eBook files generate via github action, and not the Gitbook generator, therefore, PDF files will be unavailable in local development.



Chapter 1 (Rokoko Setup)

Rokoko Suit Setup

When setting up the Rokoko motion capture suits the youtube setup series made by Rokoko will cover all the general setup instructions for getting started with the suits. All you need to do is download Rokoko Studio from their website and create an account.

<https://youtube.com/playlist?list=PL0nPCZDbYnms3zt1-A1cmf-S1fGyS6Rc3>

Although this covers most of the setup I will point out a few key factors that are either mentioned in the video only briefly or not at all. Firstly, the motion capture suits use 3 different sensors to be able to work properly which one in particular can be very sensitive to outside forces. This would be the magnometer which can be easily influenced by magnetic interference caused by metal beams being in walls, technology near the suit, and finally of course magnets. The studio space is an extremely poor recording space for these suits with extreme levels of magnetic interference that degrade the quality of recordings. To check if a room is a workable space for the suits, download an EMF reader on your phone which will give you a general reading. You should be looking for a room that reads generally 450mG's or lower but can check online with Rokoko to see if this has changed.

Second, firewall issues when connecting to your wifi router (no internet over this wifi). If you're having connection issues where your wifi settings are getting accepted in Rokoko Studio but the suit still isn't showing up on the wifi then check your firewall settings. Your firewall settings should approve these lines of what are in the images below for it to connect properly to Rokoko Studio. If it still isn't connecting to Rokoko Studio even when approving it through the firewall, turn off all connection that is to the internet and try turning off your firewall and windows security to see if it connects with them off. Make sure your computer isn't connected to the internet because your computer will have no security up during this troubleshooting process.

✓ Core Networking Diagnostics - ICMP Ech...	Core Networking Diagnostics	Domain	Yes		
✓ Core Networking Diagnostics - ICMP Ech...	Core Networking Diagnostics	Private...	Yes		
✓ Core Networking Diagnostics - ICMP Ech...	Core Networking Diagnostics	Domain	Yes		
✓ Core Networking Diagnostics - ICMP Ech...	Core Networking Diagnostics	Private...	Yes		
✓ rokoko studio.exe		Private...	Yes	Allow	No
✓ rokoko studio.exe		Private...	Yes	Allow	No

Lastly, damaged sensors or bootloader error with it not applying firmware to sensors. If the sensors on the suit do not light up at all or blinking red on the suit and in Rokoko studio then there is a good chance the sensors have died. There are only two backup sensors, one for each suit, which you can replace but please be careful when replacing them as they're not the most durable material. If the sensors are not showing up in Rokoko Studio but are blinking green, then you most likely are running into a bootloader issue. For this you will need

to contact Rokoko Studio support for them to send you a file that can release the sensors from the bootloader issue. I have already run into this issue with both suits and fixed them with the file which the support team said would fix the issue forever but thought I should still bring it up in this documentation.

Rokoko support is based in Europe so take into consideration that they mostly operate during 10pm-11am EST. You can submit a ticket during their off hours but the responses will only come around those times. If you're using the suits for a project and are having issues contact support quickly if you can't figure it out in a couple of hours. They're extremely helpful and can even hop on a call with you to troubleshoot any issues you're having.

links

Internal link 2: [Chapter 2 \(Blender\)](#)



Chapter 2 (Blender)

In chapter 2 we will cover how to use Rokoko Studio and the suits with Blender. I am going to link below the Rokoko Official playlist of videos that covers the workflow in Blender but I will advise to please look at the dates of the videos since they're not the best company to have an organized list of videos with the newest workflows. Make sure you check the description or comments to see if it states that the workflow is outdated with a link to a newer video because I have run into workflow issues to realized it is an outdated video.

<https://youtube.com/playlist?list=PL0nPCZDbYnms56sAzbWY6wMvS7XXDZmY9>

This playlist has videos covering livestreaming the motion capture from Rokoko Studio straight into Blender but I would highly advise against this workflow because it isn't well developed enough. Also recording in Rokoko Studio gives you access to filters that help improve your motion capture data so at this point it is in your best interest to record in Rokoko Studio and then export using the settings brought up in the videos to another program such as Blender.

This second video is created by a great youtuber who has made informative rigging content. Although this video is a few years old, it covers a good workflow for cleaning up the motion capture data that comes out of Rokoko Studio. I brought up filters that help with the motion capture data within Rokoko Studio but there will always be a need to clean up the motion capture. Make sure you have a good IK rig for the motion capture data because this will determine the quality of the motion capture data in Blender as well as how easy it will be to work with.

https://www.youtube.com/watch?v=TLdLwbi6OVE&list=PL9mwr_Jd7YzkNanOx6-W7QscOy4keaqH5

Lastly, make sure you're not running off the most recent version of Blender unless this version fixes issues for Rokoko Studio that were broken in previous Blender builds. Too many times I have updated to the newest version of a 3D program only for Rokoko Studio to break completely or the workflow to change significantly because of a bug or new features.

Internal link: [Let's go to Chapter 1](#)