



SketchBot™ | SETUP GUIDE

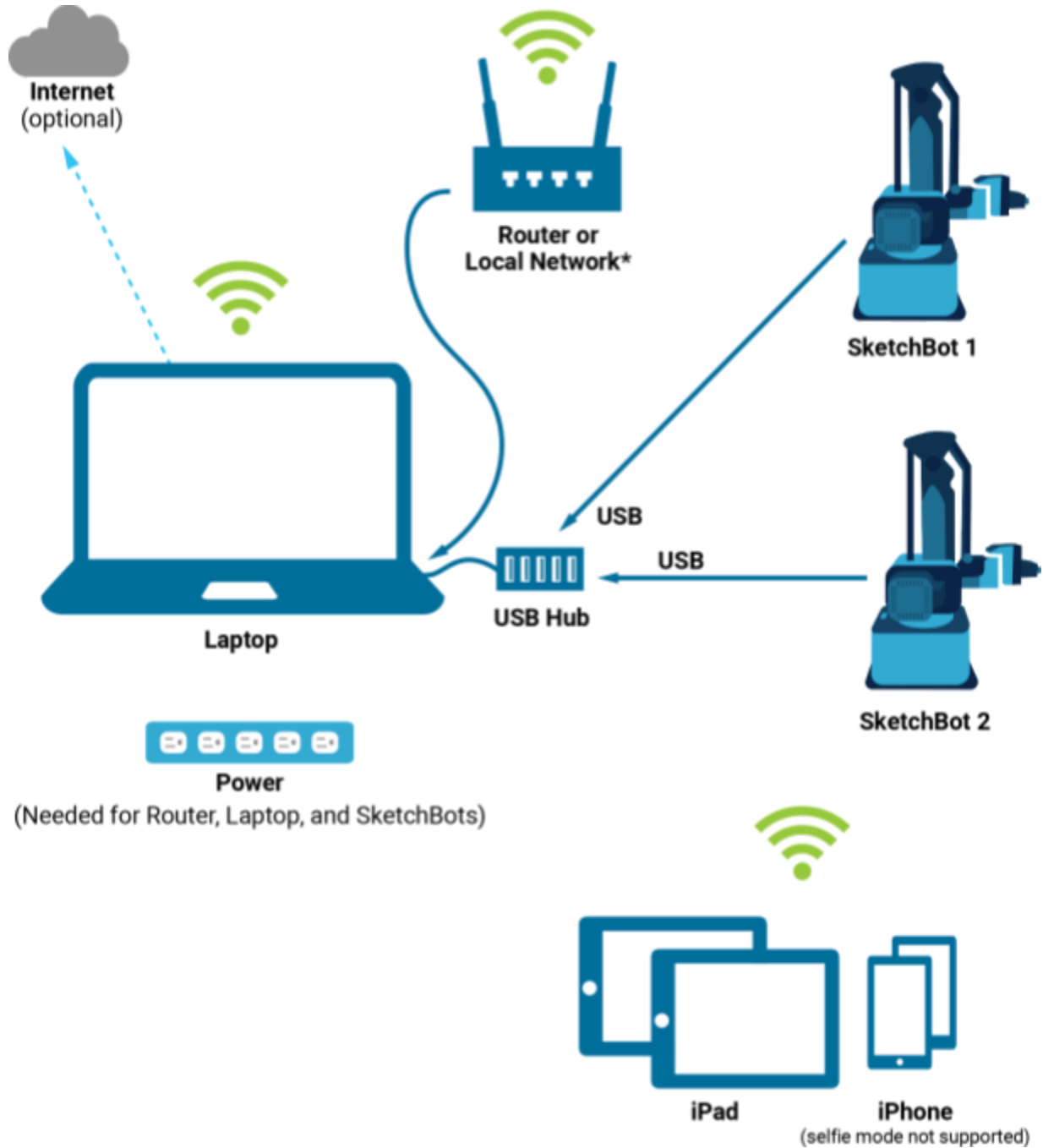


WATCH TUTORIAL VIDEO

TABLE OF CONTENTS

Basic System Hardware Setup	3
Hardwiring The System	4
Sketchbot Hardware Setup	5
Sketchbot Software Setup	6
Preparing the SketchBot to Sketch	7
Sketch Queue & Additional Settings	9
Duplicating	
Sketch Timing	
Export Sketch PNG's	
Smart Auto-crop	
Achive Onsite Photos	
Laptop Privacy Settings	10
mosaiCapture App	11
Background removal	
Background replacement	
Rear facing and front facing camera	
iPad Privacy Settings	12
Photo Taking Tips	12
Switching Sketch Training Version	13
Using a Hot Folder	14
Troubleshooting	15
mosaiCapture App	
Canon Camera	
Paper not sticking to platform	
Faint Sketches	
Pen dragging across paper	
SketchBot Calibration	16 - 17

BASIC SYSTEM HARDWARE SETUP



HARDWIRING THE SYSTEM IS STRONGLY RECOMMENDED

See page 4 for full instructions

BE SURE YOUR LAPTOP IS PLUGGED INTO POWER AT ALL TIMES.

If the laptop powers off while the SketchBots are sketching or dancing you may enter a non-recoverable state.

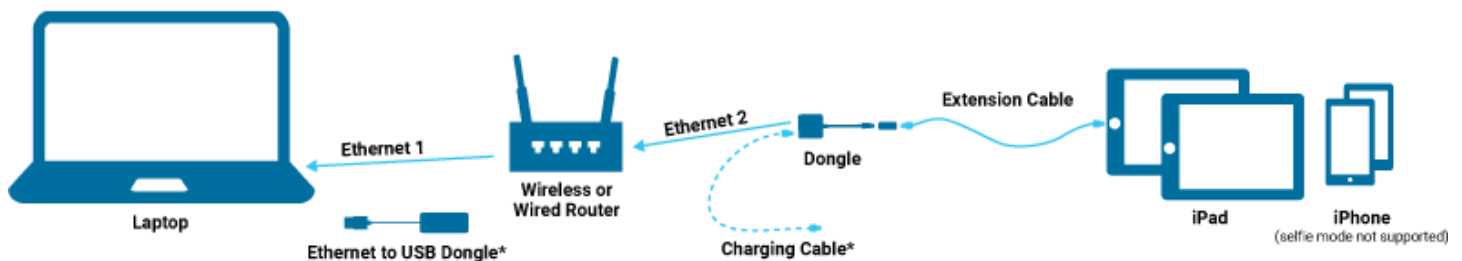
HARDWIRING THE SYSTEM

For a video walkthrough of hardwiring your system, [click here](#).

If there are 1,000+ guests present within your event space, the wireless connection between your SketchBot system components could be interrupted. Hardwiring your iPad and laptop to the router via ethernet is a great alternative. This method is also useful for stationary selfie stands and photo booths.

COMPONENTS NEEDED

- 2 ethernet cables
- iPad ethernet dongle
 - [This model](#) has the option to also connect to a power source. We use USB-C, but a lightning model also exists.
- Extension cable (USB or lightning, depending on your iPad)
- Extension adapter (we use [this USB-C model](#), lightning model also exists)
- Optional charging cable (USB or lightning)
- USB to ethernet dongle (needed if your laptop does not have an ethernet port)



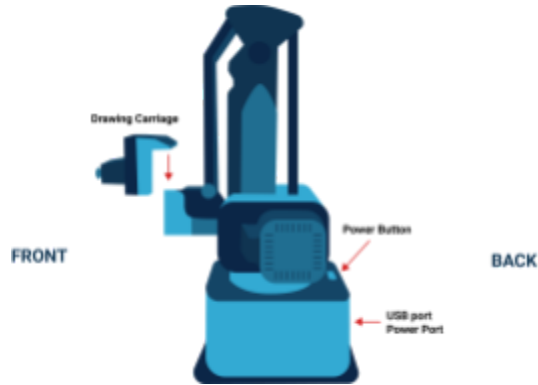
HARDWIRE SETUP

1. Connect the extension cable and adapter together, connecting one end to the iPad and the other to the ethernet dongle. With this extension, the dongle can be hidden out of sight for a cleaner look.
 - a. *Optional:* You can also connect a cable from the dongle to a power or battery source to save the battery life of your iPad.
2. Connect the first ethernet cable from the iPad dongle to one of the numbered ports on your wireless router.
3. Connect the second ethernet cable from one of the other numbered ports on the router to your laptop.
 - a. If your laptop does not have an ethernet port, use a USB to ethernet dongle

IPAD CONFIGURATION

1. In the iPad settings, navigate to wifi and turn it OFF
2. Select the Ethernet settings, tap the ethernet connection, and switch OFF the toggle for 'Limit IP Address Tracking'

SKETCHBOT HARDWARE SETUP



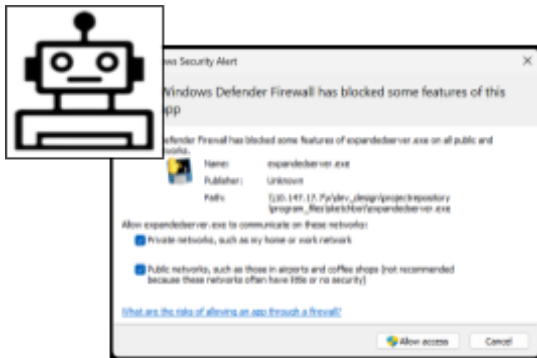
STEP 1

- Remove the SketchBot from the case along with all other hardware and cables.
- Take the drawing carriage and set it into the grooved section of the SketchBot arm (you will hear a click when locked in).



STEP 2

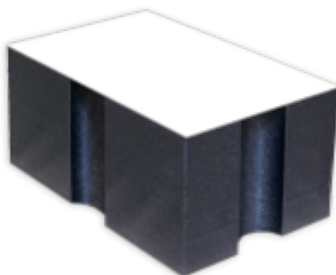
- Connect the two Hexagonal Base pieces.
- Place the SketchBot in the square cut out and the media platform in the rectangular cut out.
- When placing the 4x6 media platform in the Hexagonal Base, be sure that the nano tape (adhesive) side is facing up. Place the media platform straight in and not one end at a time.
- **DO NOT** place the pens until the SketchBot software is open.



STEP 3

- Open the 'Sketchbot' software.

Note: When opening the 'Sketchbot' software and connecting to a network for the first time, a 'Windows Defender Firewall' popup may appear. If so, it is important that 'Private' AND 'Public' are checked, then click 'Allow access'.



STEP 4

- Place a test 4x6 paper on the media platform for the software configuration.

Note: When the media platform is not in use for extended periods of time (i.e. several hours), simply place the card stock provided on the media platform to reduce dust and dirt from sticking to the surface.

Placing the paper glossy side down will ruin the nano tape.

SKETCHBOT SOFTWARE SETUP

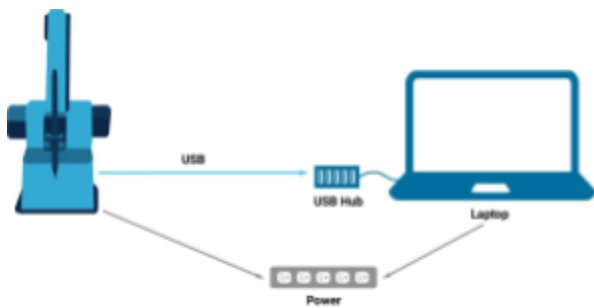


STEP 1

- Connect laptop to router or local network. If using a router, hard wiring* the router to the laptop via ethernet cable is highly recommended to maintain a static IP address.

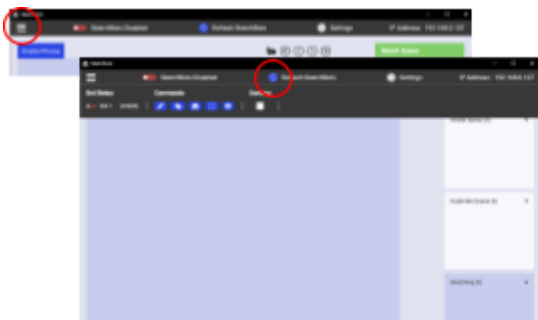
*Hardwiring instructions on page 10

STEP 2



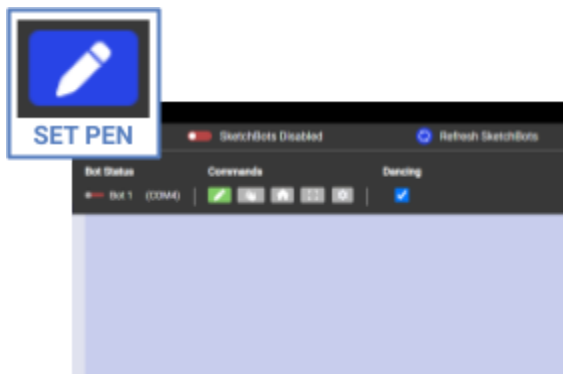
- Plug the USB cord into the back of the SketchBot in either of the ports.
- Make sure the power to the SketchBot is turned on before connecting to the computer.
- If using multiple bots and a USB hub, connect the hub to the computer and then connect each bot.
- Turning on the bots in order can help to differentiate the bots.

STEP 3



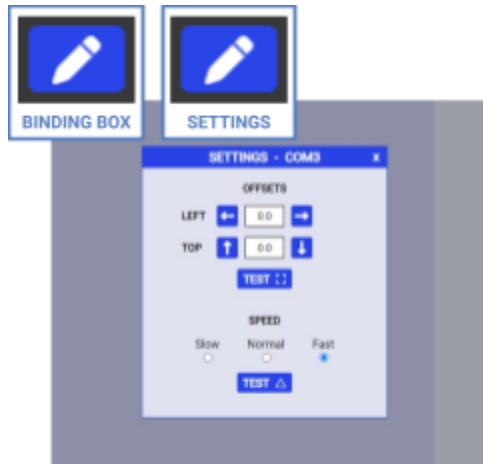
- Once the program is open, click the top left menu to reveal the connected bots.
- If new bots are plugged in, click the refresh icon to add them to the list of bots.

STEP 4



- Click the 'Set Pen' icon next to each bot. This will move the bot into the correct position to place the pen.
- Loosen the two screws on the drawing carriage to make a gap large enough for the pen to be dropped through.
- Once the pen is touching the paper, tighten the two screws simultaneously until the pen is securely in place.

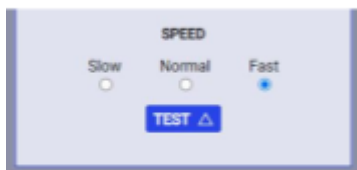
PREPARING THE SKETCHBOT TO SKETCH



STEP 1a (optional, recommended for initial setup)

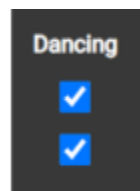
- Ensure the pen is drawing in the correct area by clicking the 'Binding Box' icon next to each bot. The bot will place a dot in 4 corners showing the area it will draw within.
- If the binding box needs to be adjusted, click on the 'Settings' icon next to the specific bot and adjust the 'Left' and 'Top' offsets as needed. After making an adjustment, click 'Test' to see if the adjustments made were enough or too much. Adjust the offsets and test until correct.

All offsets are in mm.



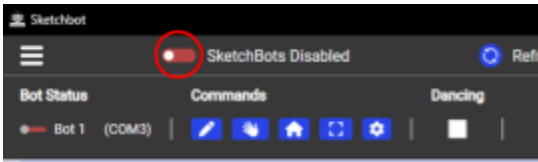
STEP 1b

- Test how smoothly the bot draws at various speeds by selecting a speed and clicking the test button. The bot will draw a test pattern on the 4x6.
- 'Fast' is the suggested speed.
- If after running the test, squiggly lines still are occurring, you can calibrate each bot by following the instructions on page 14.
- After calibrating the bots, if the issue persists, there is the option to slow down the bots.



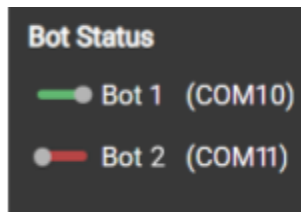
STEP 2

- Get the bot in the drawing position by clicking the 'Home' icon next to each bot.
- To have the bots 'dance' while they are not sketching, be sure the 'Dancing' checkbox is selected next to each bot.



STEP 3

- Once the bots are configured correctly and in their 'Home' position, toggle the red 'SketchBots Disabled' at the top of the program.
- The system is now ready to begin intaking pictures. (Instructions for setting up the iPad can be found on [Page 8](#)).



STEP 4 (optional)

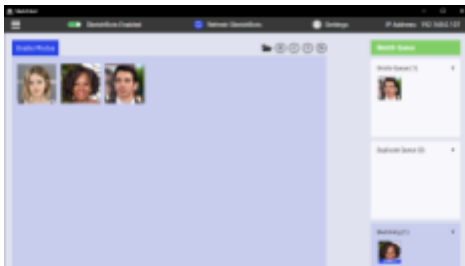
- To differentiate between multiple bots, click the 'Wave' icon next to the bot. This can be helpful when making adjustments.
- To make adjustments to a specific bot, use the toggle to the left of the bot name to turn off the bot. After making the adjustments, toggle the bot back on.
- To reorder the bots go back to step 2 on page 5.

SKETCH QUEUE & ADDITIONAL SETTINGS



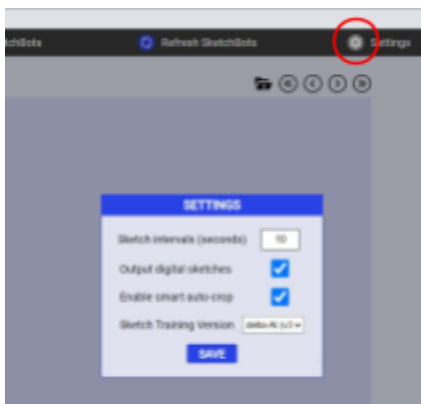
Onsite Photos/Duplicating Photos

- Once a photo is submitted it will appear in the 'Onsite Queue'. Scroll through all onsite photos by using the arrows.
- All photos will be added to the 'Onsite Photos' section.
- If a sketch needs to be duplicated, click on the photo in the 'Onsite Photos' tab. The photo will then move to the 'Duplicate Queue' and wait until there are no photos in the 'Onsite Queue'.
- Clicking the trash icon on a photo will move it to the archive folder.



Sketch Queues

- When a bot is ready, the photo will move from the 'Onsite Queue' or 'Duplicate Queue' to the 'Sketching' queue and will be labeled with which bot is assigned to sketch.
- Clicking the 'X' on a photo in the 'Onsite Queue' or 'Duplicate Queue' will remove it from the queue. If clicked in the 'Sketching' queue the sketch will stop.



Universal Settings

1. Sketch Intervals: Add more or less time (seconds) between sketches.
2. Export Optimized Sketches: Save all of the sketch PNGs. These PNGs can be found in the SketchBot folder on the Desktop in the 'sketchQueue' folder.
3. Smart Auto-Crop: Enabled by default, this feature auto-crops photos for optimal sketch results. Although this feature can work with any photo, for best results, photos should be taken from shoulders up (not full body). **Recommended**
4. Sketch Training Version (see page 10)

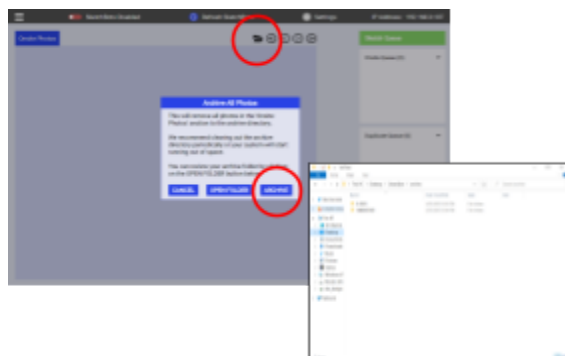


Photo Archive

- To remove the event photos from the 'Onsite Photos' tab after an event, click the archive button. From the pop-up, click 'Archive'.
- To access previously archived photos, click the archive button and then 'Open Folder'. This will open a 'File Explorer' window with the archive folder open.
- Empty the archive folder regularly and save the images elsewhere on the computer to avoid potential problems.

LAPTOP PRIVACY SETTINGS

In order for your laptop to properly receive photos from the iPads, your local network will need to be set to private. Below are the appropriate steps according to your Windows operating system.

Windows 10

1. Open the **Settings** application
2. Go to the "**Network & Internet**" page
3. Go to the "**Status**" page
4. Click the "**Change connection properties**" link
5. Select the "**Private**" option (**Network Discovery** feature is turned on by default)
6. Close the Settings application

Windows 11

1. Open the **Settings** application
2. Go to the "**Network & Internet**" page and click **Ethernet**
3. Click the **Change Advanced Sharing Options** button
4. Under the network profile, choose **private**

For laptops running Windows 11, the **Network Discovery** feature will need to be turned on manually.

1. Open the **Settings** application
2. Go to the "**Network & Internet**" page and click **Ethernet**
3. Click the **Change Advanced Sharing Options** button and turn on **file sharing**
4. Under Private (current profile), check **Turn on Network Discovery**
 - a. Also check **Turn on Automatic setup of Network Connected Devices**
5. Expand Private (current profile). Check **Turn on File and Printer Sharing** under File and printer sharing
6. Scroll down and expand **All Networks**. Check **Turn on Sharing** so that all devices with network access can read and write files in the Public folders under Public folder sharing.
7. Click the **Save Changes** button

If you are unable to change the network profile during the above process, please try the following steps:

1. Open **PowerShell** with Administrative Privileges:
 - a. Type "PowerShell" in the Start menu, right-click on the **Windows PowerShell** result, and choose **Run as administrator**
2. Before changing the network profile, you need to identify the network you want to change. Run the following command to list all network connections:
 - a. **Get-NetConnectionProfile**
3. Find the name of the network you want to change (it will be listed under **InterfaceIndex#** in the output).
4. Use the **Set-NetConnectionProfile** cmdlet to change the profile to private replace **IndexNumber** with the actual number:
 - a. **Set-NetConnectionProfile -InterfaceIndex IndexNumber -NetworkCategory Private**

MOSAICAPTURE APP



STEP 1

- Download the mosaiCapture app for iPad from the App Store. NOTE: iOS 15 or greater required.



STEP 2

- To connect the iPad to the computer, make sure they are both on the same network and then tap 'Begin Sketchbot Scan'.
- Select 'NAME OF LAPTOP:Sketchbot' under 'SCANNING'.



STEP 3a - Front Facing Camera

- If the front facing camera is needed (for selfie stations or ring light cameras), double tap in the top left and select 'Configure Camera'.
- Select 'Front Facing Camera' and additional settings
Optional settings: Display Countdown (3 seconds)
Silhouette Overlay
Pro Tip Overlay (for Gamma version)
6 Different Animation Options
[Preview Animations](#)

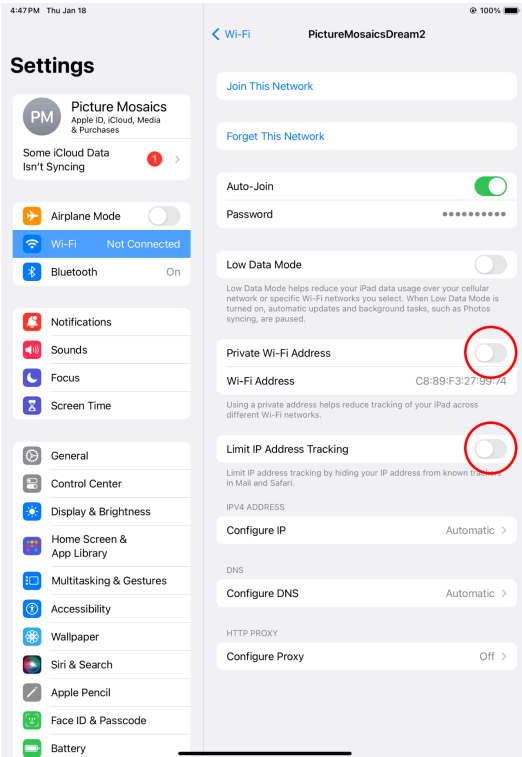
NOTE: If you are not using a ring light, you have the option to add the front flash. This is suggested.



STEP 3b - Rear Facing Camera

- The rear facing camera is for a dedicated photographer. Set by double tapping in the top left and select 'Configure Camera'.
- Select 'Rear Facing Camera'. NOTE: The only additional option available is the 'Silhouette Overlay'.
- For rear facing, we suggest turning the flash ON.

IPAD PRIVACY SETTINGS



iPad Wifi Network Settings

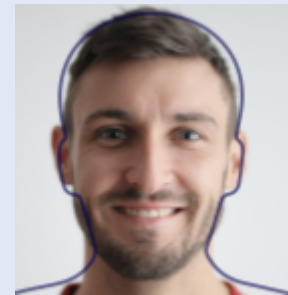
1. Once your iPad is connected to the same network at the laptop, navigate to the wifi network settings on your iPad
2. Tap the info icon next to your wifi network
3. Toggle OFF both of the following settings
 - a. Private Wi-Fi Address
 - b. Limit IP Address Tracking
4. Turning off these two settings will allow your iPad to connect and transmit photos to your laptop

[Click here](#) for a video walkthrough of this process.

PHOTO TAKING TIPS

TIPS

- If the lighting in the room is dim, use the flash for better results.
- Try to avoid taking photos with other people in the background. This may cause the bot to draw additional lines and shapes.
- **If using the MosaiCapture app**, a silhouette overlay can be added to the camera to assist in getting the best photo distance. Best practice is to line the silhouette ears up with the guests' ears.



DON'TS

- DO NOT take photos at a distance.
- DO NOT take a photo with more than one person. The system was trained to only draw one face and this is the only way to get the most facial details.
- Avoid taking photos with props.
- Only works with humans, not animals.



SWITCHING SKETCH TRAINING VERSION

Update training version in the settings menu



NEW: delta-AI (v3.85+)

More detailed

Better beards

Better hair

Typically better noses

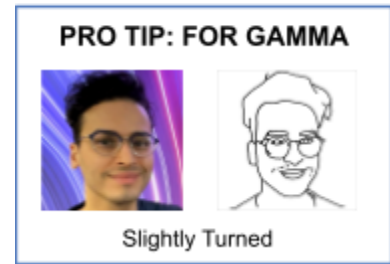
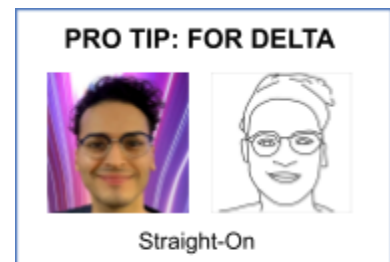
Typically more likeness

Straight-on headshots are better

Original: gamma-AI (v3.84-)

Slightly faster

Better with slightly turned heads



USING A HOT FOLDER

The hotCopy script will copy photos from one directory to another. This can be used to copy photos into the SketchBot 'watch' folder if using your own photo booth app or DSLR camera, etc. If using our iPad app to take photos, this script is not needed.

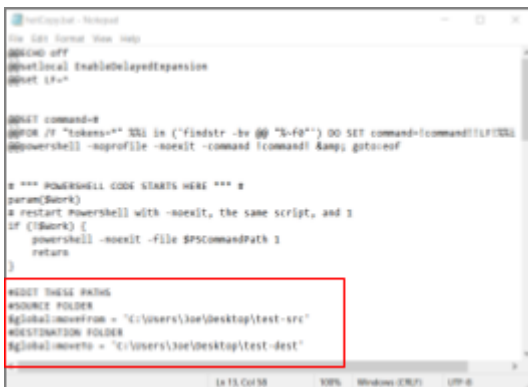


STEP 1

- Download and unzip hotCopy.zip from this link.
- Copy hotCopy.bat to any location where you can easily run it (on your desktop is fine).

STEP 2

- **Before you run the script**, open Notepad and drag in the hotcopy.bat file.
- Edit the lines under #EDIT THESE PATHS. Shown below in red and blue:



`$global:moveFrom = 'C:\Users\Joe\Desktop\Canon-Cam'`

NOTE: This is where your photo-taking device is storing the photos

#DESTINATION FOLDER

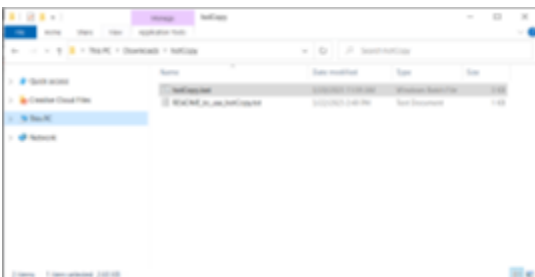
`$global:moveTo = 'C:\Users\Joe\Desktop\SketchBot\watch'`

NOTE: This is where the script will be transferring them to (and where the SketchBot software will be pulling from)

NOTE: 'Joe' as seen above will be replaced with your username

STEP 3

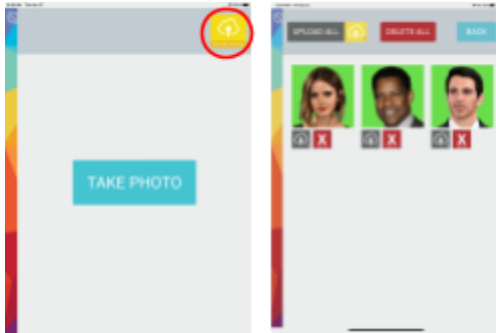
- Save the Notepad document and run the script.



TROUBLESHOOTING

MosaiCapture App

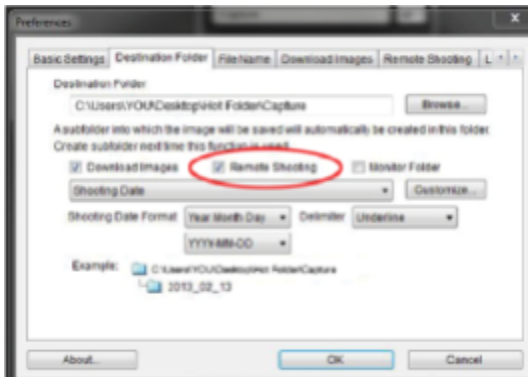
In some cases if there is a connection issue, photos may end up in the 'Offline Photos' button.



- Click on the yellow button in the top right. This will show all of the images taken on the specific iPad.
- Click on the gray cloud below the photo that did not sketch.
- Once uploaded the gray cloud will turn green.

Canon Camera

With Canon cameras, when shooting tethered using Canon EOS Utilities, it is necessary to turn on a feature in Canon Software to allow Capture. One to effectively use the Hot Folder Feature.



- Once the Camera is connected to EOS Utilities, turn on the Remote Shooting feature in EOS Utilities.

Hardware Troubleshooting

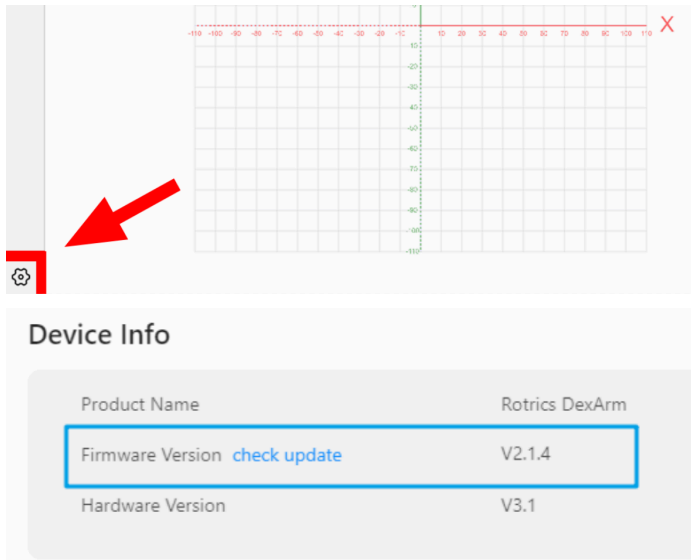


- **Paper not sticking to the platform:** Gently clean the adhesive nano tape surface with soap and water. Pat dry and then let air dry.
- **Faint sketches:** Replace the pen/marker
- **Pen dragging across paper:** Slightly loosen the two screws holding the pen (not so much to where the pen falls out). Pull the pen up 1mm. Re-tighten the screws.

SKETCHBOT CALIBRATION

If you are encountering issues with your sketches that are not solved by the troubleshooting steps above, you can attempt these **calibration methods**.

These require you to have your SketchBot **on, connected to your PC**, and [Rotrics Studio](#) installed. To allow Rotrics Studio to interface with your SketchBot, use the **Link button** (located directly above “Control Panel” on the interface) to connect your bot.



METHOD 1 - FIRMWARE UPDATE

- Open the **Settings menu** using the gear icon located in the bottom-left of Rotrics Studio.
- Check your SketchBot for **updates** using the button to the left of your current **Firmware Version**. If there are firmware updates, ensure they are installed properly.



METHOD 2 - FACTORY RESET

- Open the **Terminal** by enabling the switch located to the left of the Link button.
- Once in the Terminal window, type **M502** and click **Send** to reset your SketchBot.
- Type **M500** and click **Send** to save these settings.

METHOD 3 - FULL RECALIBRATION



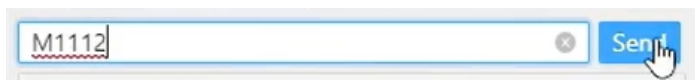
- Inside the **Terminal** window, type **M18** and click **Send** to **deactivate the SketchBot's motors**.



- With your hands, **manually maneuver** the SketchBot so that its arm is angled as **far back** and as **far upwards** as possible. It is important to keep the arm **centered** as well (not too far to the right or left of the base).



- Once the arm is in place, type **M889** and click **Send** to have the SketchBot **save this position**.



- Type **M1112** and click **Send** to return the bot to the **Home position**.

If the squiggly lines persist, you can try setting the SketchBot to a **slower speed** in the SketchBot Manager software (**see Page 6, Step 1b**).

Ultimately, if that still does not work, **the SketchBot has exceeded its lifespan and will need to be replaced**.