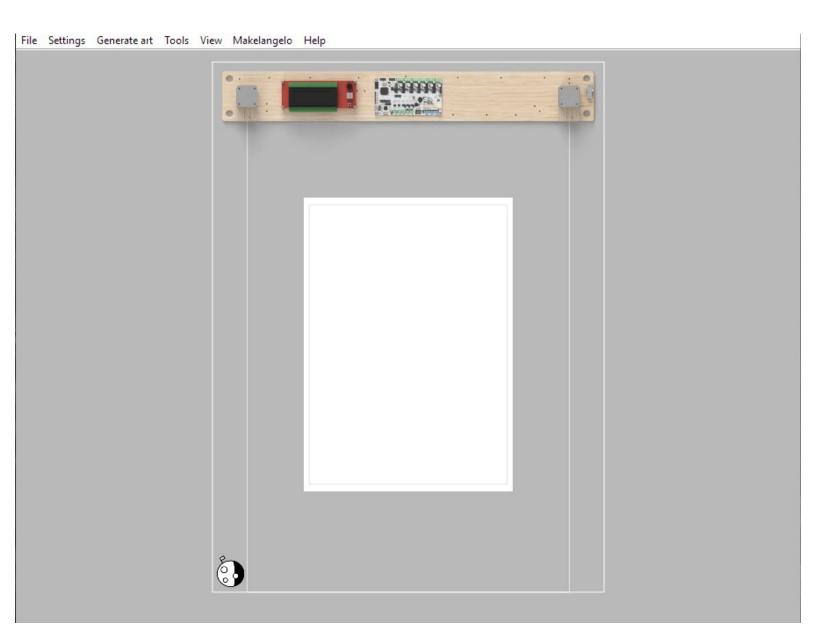
mcr

4. How to use Makelangelo Software 7.32+

Instructions for running the software for the first time, preparing the drawing and sending it to your plotter robot.

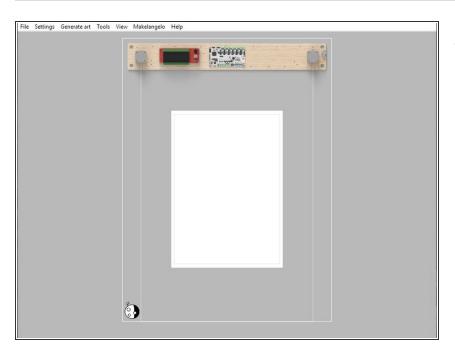


Written By: Dan Royer

INTRODUCTION

Instructions for running the software for the first time, preparing the drawing and sending it to your plotter robot. There is more than one way to **Prepare** art and more than one way to **Run** the robot. It's OK to skip some steps.

Step 1 — Welcome!



 This guide will show you how to use Makelangelo Software 7.32.0+

Step 2 — Install Java (if necessary)

5	
form, Standard Edit	tion Development Kit (JDK $\ensuremath{^{\rm M}}\xspace$). The JDK is a development environment for building
ms written in the Ja	wa programming language and running on the Java platform.
File size	Download
179.13 MB	https://download.oracle.com/java/19/latest/jdk-19_windows-x64_bin.zip (sha2
158.91 MB	https://download.oracle.com/java/19/latest/jdk-19_windows-x64_bin.exe (sha
t	tform, Standard Edi ims written in the Ja File size 17913 MB

- Visit <u>https://www.oracle.com/ca-en/java/techno...</u>
- Choose your OS
- Click the link of your choice to download the Java installer app.
- Run the installer app when the download is done.

Step 3 — Install Makelangelo Software

2. mananidan perih	Welcome to the Makelangelo Setup Wizard	End-User License Agreement Please read the following icense agreement carefully
	The Setup Woard will install Makelangelo on your computer. Click Next to continue or Cancel to exit the Setup Wilzard.	GNU GENERAL PUBLIC LICENSE Version 2, June 1991 Copyright (C) 1989, 1991 Free Software Foundation, Inc., chttp://fsf.org/> 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. Preamble ♥
Makelangelo Setup Destination Folder Click Next to install to the de	Back Next Cancel - X effult folder or click Change to choose another.	Print Back Next Cancel Makelangelo Setup
Install Makelangelo to:		Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.
C: Program Files Makelangel Change	10	
	Back Next Cancel	Back Dinstal Cancel

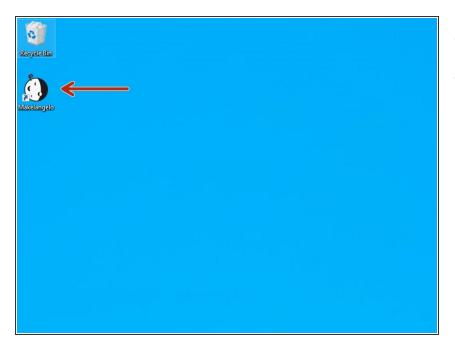
- Makelangelo Software for Windows, Mac, and Linux can be downloaded from two places:
 - The official stable release
 - The unstable Nightly Build
- After downloading the application, run it and follow the steps therein to install Makelangelo Software.

Step 4 — Windows only: Install RUMBA Drivers

	from Makerbase so there r	eeds to be a page adress	sing setup and use of the F			
MBA board	RUMBA PCB hole spacing dimensions	RUMBA schematic	RUMBA schematic EXP3 connector	RUMBA PCB all layer		
fety Tip						
Just in case		hop smoke detector®. Go S ows 8/7/Vista/XP 32 and	t 12 volts - you have to tak t no smoke detector? Get 64 bit		precautions to avo	d fires.
File:RRD F						
CLASSIC: When you			77 64bit, use the easy me ter you might need to prov		ead)	
CLASSIC: When you File:RRD-F	attach RUMBA for the first				əad)	
CLASSIC: When you File:RRD-F	attach RUMBA for the first RUMBA USB DRIVER zip				ead)	
CLASSIC: When you	attach RUMBA for the first RUMBA USB DRIVER zip nm x 75mm				ead)	
CLASSIC: When you File:RD-F atures compact size: 1355 fully integrated all • Arduino 2560-1	attach RUMBA for the first RUMBA USB DRIVER zip nm x 75mm	time to a Windows compu	ter you might need to prov		ead)	

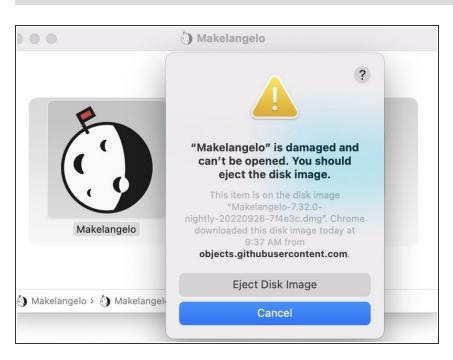
- Makelangelo robot uses the RUMBA control board in the robot. To talk to your computer you may need to install a *driver*.
- If you are on Windows, please make sure you already have the drivers for the RUMBA board from <u>https://reprap.org/wiki/RUMBA#RUM</u> <u>BA_USB_...</u>

Step 5 — Run Makelangelo Software



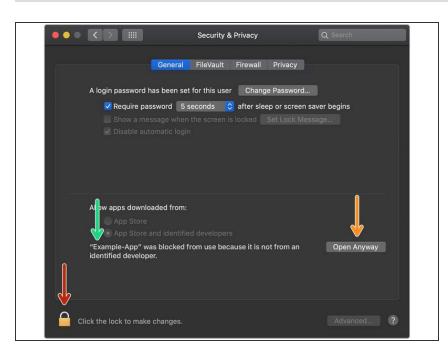
- Double click on the app in your PC.
- A dialog will ask you to choose your preferred language.
 - Don't see your favorite? Help us help you! <u>https://crowdin.com/project/margin</u> <u>allycl...</u>

Step 6 — OSX "file damaged" message



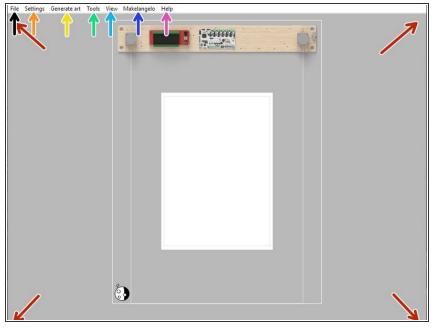
- Open the System Preferences by Selecting Apple Menu > System Preferences
- Click *Security & Privacy* under the *General* tab.
- Click the icon labeled *Click the lock to make changes* in the bottom-left corner.
- Enter your username and password into the prompt that appears and click Unlock. (If you have no password, this can be left blank).
- Under the section labeled Allow applications downloaded from:, select the option "Anywhere". On the prompt that appears, click "Allow From Anywhere."
- If that doesn't work, open a console and entering the command sudo xattr -cr
 /Applications/Makelangelo.app
- This is due to this bug

Step 7 — OSX security issue



- OSX may block the Makelangelo Software because it is from an "unidentified developer".
- Click the apple icon in the top left, then System Preferences, then Security & Privacy. Having just tried to run Makelangelo-software*.jar, it should appear in this message.
- You might need to unlock to allow security changes.
- Click Open Anyways.
- Your security for this version of the app should now be set forever. Next time the app updates you might need to do this again.

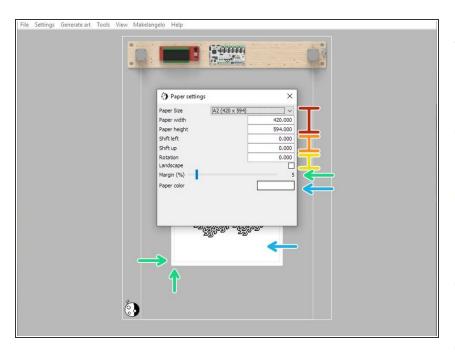
Step 8 — Familiarize yourself with the controls



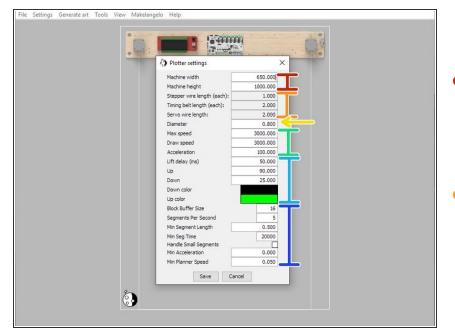
- In the main window you can drag to pan and scroll the mouse wheel to zoom the *what you see is what you* get preview.
- The File menu is where you can load images including SVG, DXF, Scratch 3 programs, and bitmaps like photographs or your favorite meme.

- The *Settings* menu controls the paper, pen, and plotter preview. The default paper size is A2.
- The *Generate Art* menu creates different styles of algorithmic procedural art. Try it and see!
- The *Tools* menu will change your art after being loaded/created. Scale, flip, and *optimize for drawing* tools like Simplify and Reorder.
- The *View* menu can move the camera with **zoom to fit** but also **show travel moves** and advanced features like **render style** which reveals *how the robot thinks about the art being drawn*.
- The Makelangelo menu controls the cosmetic preview of the robot, the drawing estimate time, robot commands save GCODE to SD card/disk, and finally Open Controls to talk live to a connected robot.
- The *Help* menu has links for our Discord forums, a check for updates features, and more.

Step 9 — Paper Settings



- *Paper size* will automatically change the *width* and *height* based on pre set values.
- *Shift* will move the paper inside the printer.
- Rotatewill turn the paper.
 Landscape will instantly switch between 0 and 90 degrees.
- *Margin* on your paper will prevent the pen from going off the edge.
- *Paper color* is great for experiments with silver/gold pens on colored paper.

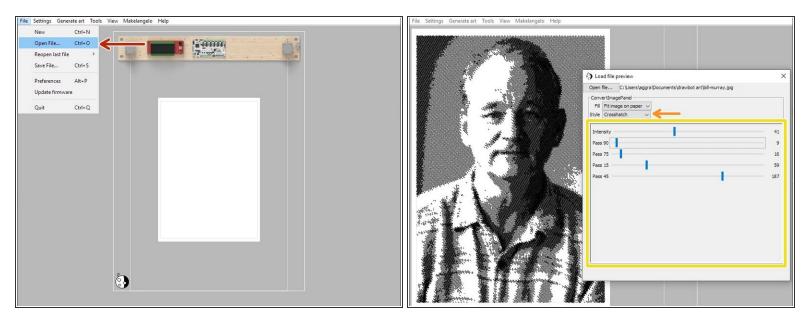


Step 10 — Plotter settings

- Machine width and Machine height control the size of the maximum allowed drawing area, aka the work area.
- If you are making a DIY plotter the Stepper, Timing belt, and Servo length (meters) will help you plan your design.

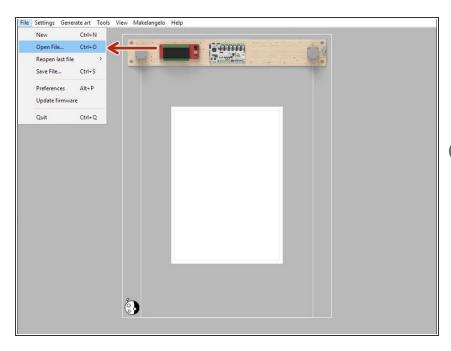
- Diameter controls the size of the pen tip on the paper. This is used by nearly every algorithm. The default size of a Sharpie tip is 0.8mm
- speed and acceleration affect horizontal and vertical movements, only. Experiment and share your results in the forums.
- bigger Lift delay makes the pen rise and fall from the paper more slowly, which helps prevent bouncing. Up and Down are angle values. The default is 90 for up and 40 for down. Up color can only be seen when View> Show travel moves is on.
- The remaining settings are advanced parameters used for time estimates and should only be changed by expert users.

Step 11 — Draw from a photo



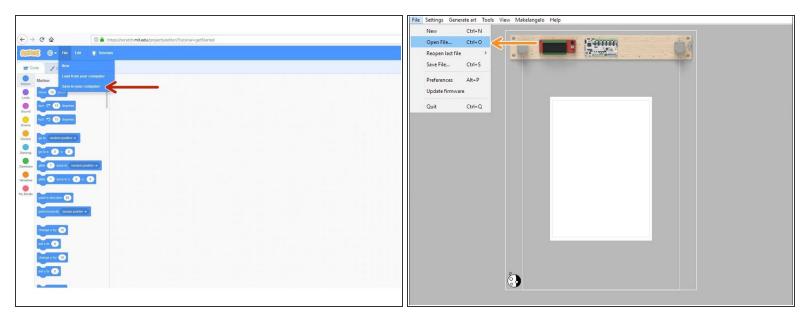
- Click *File > Open File...* and select your **PNG**, **BMP**, **JPG**, **GIF**, or **PIO** image file.
- The *Style* list lets you choose one of several image-to-line converters.
- Most styles will have additional settings to tweak.
- (i) When you are satisfied, close the dialog and proceed to *Makelangelo > Save to SD card* or *Makelangelo > Open Controls*. (we recommend the SD card)

Step 12 — Load a vector file



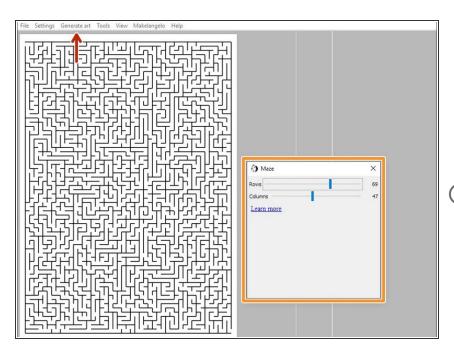
- Click Open File... and select your
 DXF, SVG, or GCODE file. The image will be automatically scaled to fill the paper margins.
- When you are satisfied, close the dialog and proceed to Makelangelo
 Save to SD card or Makelangelo > Open Controls. (we recommend the SD card)

Step 13 — Load a Scratch file



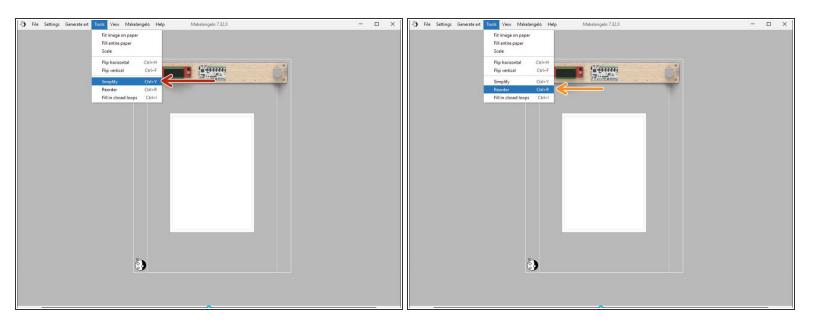
- Build your Scratch drawing at https://scratch.mit.edu/.
- Click File > Save to your computer.
- Click Open File... and select your **SB2** or **SB3** file. The resulting program will be automatically scaled to fill the paper margins.
- (i) When you are satisfied, close the dialog and proceed to *Makelangelo > Save to SD card* or *Makelangelo > Open Controls*. (we recommend the SD card)

Step 14 — Generate art



- Click Generate art and select a style. Here the user has chosen Maze.
- Many styles have sub options that can be adjusted. Experiment!
- When you are satisfied, close the dialog and proceed to Makelangelo
 Save to SD card or Makelangelo > Open Controls. (we recommend the SD card)

Step 15 — Optimize drawings



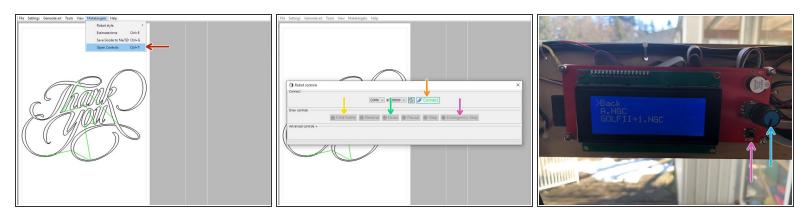
- Simplify looks for short lines that added together would equal one longer line and makes the swap.
- Reorder rearranges the existing lines to reduce the total amount of travel moves. Try it when "show travel moves" is turned on!

Step 16 — Draw from SD card (recommended)



- Put the SD card in the computer and click Makelangelo > save to file/SD card. Follow the steps and save the file to the SD card.
- Eject the SD card and plug it into the robot on the left side of the LCD panel.
- Click the dial, scroll down to **print from media**, click again, scroll to the file, and click one more time. Follow the prompts on the LCD panel.
- Don't forget to Find home on the robot before starting your drawing! Find home can also be done through the LCD menu.

Step 17 — Run the robot connected



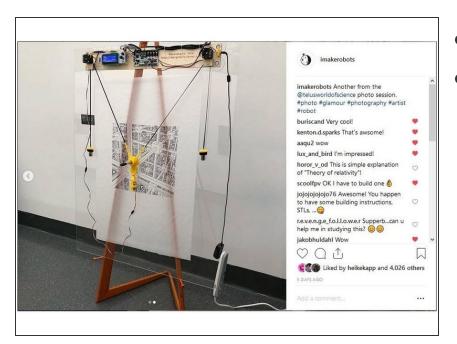
- Plug a USB cable from the robot into your PC running Makelangelo Software.
- Click Makelangelo > Open Controls.
- Choose a port and click *Makelangelo > Open Controls*.
- (i) If you have no port then your robot is not on, not connected, or your operating system has a security issue.
- click *Find home*. Your robot should move the pen head down and the counter weights up until the weights touch each switch twice.
- Click *Draw*. You will be reminded to setup your pen in the pen head. Now is a good time to take the cap off the pen!
- The same warning appears on the LCD panel. You much click the blue dial by pressing in, once.
 The machine will begin to draw.
- If something is going wrong with your drawing, you can press the reset button on the LCD panel or EMERGENCY STOP in the app.

Step 18 — Windows firewall issue

C:\Windows\system32\cmd.exe	Rem and Security -	oved appo – D
<pre>CWindowskystem32(cmd.exe 2021 0-115 10:42:31 checking for updates 2021 0-115 10:42:33 done. 2021 0-115 10:42:33 done. 2021 0-115 10:42:33 done. 2021 0-115 10:42:33 done. 2021 0-115 10:42:33 done. 4 fatal error has been detected by the Java Runtime Environment: EXCEPTION_ACCESS_VIOLATION</pre>	average for output Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output average for factors Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output Image: Control output	Image: Source Contract Source () Version Different Field () Image: Source Contract Source () Image: Source () Image: Source Contra
# See problematic frame for where to report the bug. # Press any key to continue		2 Cent

- This error often looks like Windows crashes when you click **Connect**.
- In Windows press Windows Key + R to open Run.
- Type **control** and press *OK* to open Control Panel.
- Click on System and Security, then Windows Defender Firewall, then Allow an app or feature through Windows Defender Firewall
- In the allowed app window, scroll through all the apps. Locate the **Makelangelo**. If it does not appear, locate **Java(TM) Platform SE binary**.
- If it is unchecked, the app is blocked on the Firewall. Check the app and click OK.

Step 19 — Show off your creation



- Take a picture.
- Post it on social media. Some great tags are #plottertwitter, #plotter, and @imakerobots so we can reshare it