

Graph digitizer comparison – 16 ways to digitize your data (updated)

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Although pdf files are the current standard for the dissemination of scientific knowledge, the format comes with several, well known, drawbacks. An important limitation is the difficulty to re-use the data embedded in graphs and plots. Even with the advent of “enhanced” html versions of articles, data is still most often represented with images, which makes it difficult to extract the raw numbers. A few initiatives from publishers now ask researchers to submit their data along with their manuscript. But for the millions of paper already published, a number of different software solutions can help you digitize the data from plots and graphs.

Digitize your graphs and plots

All the tools presented below follow a similar process to convert bars graphs, scatter plots, and line plots into a series of numbers.

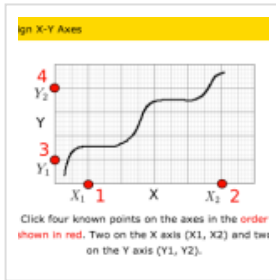
1. Open a graph



Depending on the software, the graph can be imported directly from a .pdf file, or will first have to be converted to an image format (jpg, bmp, png, gif...). The image can be obtained through the html version of the paper, or by taking a screenshot of the pdf file (on Mac use command-Shift-4; on Windows use the print screen button or by use the *Snipping Tool*; on Linux use the *Take Screenshot* application). When saving your screenshot, be aware of what file format your software accepts.

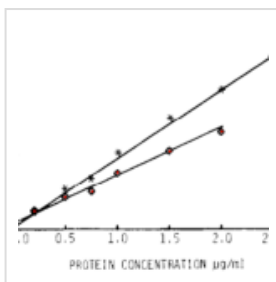
2. Set the scale

T



The software will ask you to define the axis and set the scale. This is how it will define the coordinates of each point. The more precise you are while doing this, the better your results will be. Most software allow for distorted axis (not perfectly perpendicular). And remember to indicate whether the graph is in log scale. (the image to the left taken from WebPlotDigitizer).

3. Digitize the data points



You then need to digitize the points or lines. Depending on the software, this step is going to be more or less automated. Most often, you are asked to, at least approximatively, indicate where the points or lines are located. Some fully manual will ask you to draw over the points or line in order to digitize the data.

4. Export the data



Finally, copy and export your data into the format that is most convenient to you. Some software include additional acquisition data analysis functionalities. But most often this is done by simply pasting a table of coordinates in your favorite data processing software.

Comparative study of graph digitizer softwares

We have put together a comparison table of 16 graph digitizer software. There might be others out

there worth mentioning. Please do not hesitate to comment and we will add them to the list.

	◆ PLATFORM ◆	COST ◆	AUTOMATIC DETECTION ◆	FILES SUPPORTED ◆	POST AQUISITION ◆ ANALYSIS	YEAR ◆
Dagra: Digitize graphical data	Windows	\$49.95	yes	~ all image formats	no	2012
DataThief	Windows, MacOS, Unix	\$25	no	JPG, PNG, GIF	no	2006
dcsDigitiser	Windows	\$423	yes	~ all image formats	yes	2015
Digitizelt	Windows, MacOS, Unix	\$49	yes	~ all image formats	no	2014
Engauge	Windows, MacOS, Unix	Free	yes	~ all image formats	no	2015
g3data	Windows	Free	no	~ all image formats	no	2011
Get Data	Windows	Free	yes	~ all image formats	no	2013
Graph Click	MacOS	Free	yes	~ all image formats	no	2014
im2graph	Windows, Linux	Free	yes	~ all image formats	no	2015
Graph Data Extractor	Windows	Free	no	BMP, JPG, TIF, GIF, and PNG	no	2011
Image J plugin	Windows, MacOS, Unix	Free	no	~ all image formats	no	2014
MATLAB tool (GrabIt)	Windows, MacOS, Unix	Free	no	BMP, JPG, TIF, GIF, PNG	yes	2007
Plot Digitizer	Windows, MacOS, Unix	Free	no	JPG, PNG, GIF	no	2014
Un-Scan it	Windows, MacOS	\$345	yes	~ all image formats	yes	2014
WebPlotDigitizer	Web based	Free	yes	~ all image formats	no	2014

WinDig Data digitizer	Windows	Free	no	BMP	no	1994
xyExtract Graph Digitizer	Windows	\$45	no	BMP	no	2011

So what solution is best for you? Well, as often, it depends. For most cases, using the browser-based [WebPlotDigitizer](#) will be the most convenient. It handles many types of graphs and plots, while being free. It does not require any installation, and is compatible with all platforms. You might want to consider however that because WebPlotDigitizer is a web-based tool, the current software version number is unknown, which makes it hard to reference the analysis you will have done with precision and can get in the way of reproducibility.

For the more demanding situations, [Un-Scan it](#) might help, since comes with the longest list of functionalities. It is also the most expensive solution listed here.

Also, if you are a R user, you will find [tutorials](#) online on how R can help you extract data from graphs, and [a paper describing a dedicated R package developed by Timothée Poisot](#).

Please comment and share your experience with these tools! Many thanks to [David LeBauer](#) for his insights and comments.

Update (30th of July 2015). I have added to the list [im2graph](#)

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10 THOUGHTS ON "GRAPH DIGITIZER COMPARISON – 16 WAYS TO DIGITIZE YOUR DATA (UPDATED)"



Shai Vaingast

on [March 16, 2015 at 8:42 am](#) said:

You can also use [im2graph \(http://www.im2graph.co.il\)](http://www.im2graph.co.il) to digitize plots (either black and white or color). It's quite simple to use but powerful. Free and runs on Windows and Linux.

– Shai