User guide

1. Visit SAI website (<u>https://sai.plantphenomics.org.au/</u>) and click on "Login" or "Start Measuring". This will bring you to the login page.



2. Enter your registered email and password to login and start an image measuring session through "Start Measuring" or "Create Job" under "Measure" section.



If you are a first-time user, please click on "Register" to gain access to the image measuring session. To start, register your email and create a password (a). After completing this step, you will receive an email for verification (b). Once your account is verified, you can log in and begin an image measuring session (c).

(a) Plant Physiolog	gy Accelerated	About Publications Resources FAQ Login
	<mark>≗</mark> Sign Up	
	Email Address	
	Password	
	Confirm Password	
	Sign Up	
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3. When a new image measurement section starts, you are required to give the session a "Job Name", select the right "Species", fill in the "Camera Calibration" of your microscope camera that captures your image, and select images through the "Choose Files" button. Supported image format are 'png', 'bmp', 'jpeg', 'jpg, 'jpe', 'jp2', 'tiff' and 'tif'.

Plant Physiology Accelerated	About Publications Resources FAQ Measure - Account -				
Sut	🖴 bmit Job				
Job Name Test_run Species Barley	 Camera Califration (sitellajum) 4.2736 				
Upload Sample Images					
Submit					

We highly recommend our lovely users check the lens magnification and image resolution before running. For the best results, we recommend images captured with 10 × 20 magnification at 2592 × 1944 resolution for Arabidopsis and 10 × 10 magnification at 2880 × 2048 resolution for Barley (image examples are in Figure 1(a) for Arabidopsis and Figure 1(b) for Barley in our publication, and also see below).



Arabidopsis

Barley

Click the "Submit" button at the bottom to initiate image uploading. **Please do not close the page while uploading images.** Depending on your internet speed, file size, and the number of images to be uploaded, this process may take a while to complete. Once the image upload is completed, a "Success" page will show.



4. When your submitted job is done, an email notification from <u>sai@adelaide.edu.au</u> will be sent to your registered email address with a link. Click on the link, and it will direct you to your completed session, where you can obtain your measurements and image visualisation. If the link brings you to a login page, please log in as usual and click on the link from the email again.



With the downable measurement results, there are two tabular output files. The "Aggregate Measurements" contains stomatal counts, density and max results as per image. The "Pore measurements" contain individual stoma measurements including stomatal pore width, length, area and width/length ratio; guard cell area (total area as per stoma) and subsidiary cell area (if applicable, like barley, total area as per stoma). The "confidence" score in the "Pore measurements" result indicates how confident SAI provided each measurement in a range from 0 to 1. By default, SAI filters out unreliable measurements in advance with confidence less than 0.6 before producing outputs. For a more detailed explanation of output results, please refer to Fig. S1 from supporting information of our publication "StomaAI: an efficient and user-friendly tool for measurement of stomatal pores and density using deep computer vision". Once the measurement results are retrieved, you can delete your job by click "Delete Job".

5. All your submitted job can be found in "View Jobs" under "Measure" section, unless deleted. Click on the job listed will direct you to the corresponding session of measurements and image visualisations.

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Name 🕴	Species 0		Calibration (pixels/µm) 🍦	Status	U Submitted	÷	
test1	Barley		4.273600	Completed	26/5/25 21:06		
Test_run	Barley		4.273600	Completed	19/2/25 03:01		
Showing 1 to 2 of 2 en	tries				ec <	1 > »	
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