

Gap Analysis

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There are four MATLAB scripts. Run each in turn.

GapAnalysisPart1.m gives an example of how your tif files could be processed in order to reduce the resolution, make the image binary and remove small objects. This file then saves the necessary data for stage 2.

GapAnalysisPart2.m finds the maximum circle that can fit in any one location in the image whilst not overlapping with the fibres or not fitting on the entire image. This stage takes the longest. Its speed could be increased (e.e. by incorporating the Matlab function `Imfilter`) but it has never needed to be for our images.

GapAnalysisPart3.m goes through the circles from largest to smallest and only keeps a circle if it does not overlap with any others.

GapAnalysisPart4.m gives a plot of the circles overlaid onto the fibres.

The key output is generated in `GapAnalysisPart3.m` and is in the variable ' `stored_R` '.

Before you run the code you will have to go through the code and change the target directories. This is noted at the top of each script.

Finally, in `GapAnalysisPart1.m` there are other parameters you will need to edit (e.g. the threshold level to convert colour images to binary). These are also noted in the script.