

New software to allow more and larger images on Wikipedia

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Researchers have developed new software that will allow users to put more and larger images on Wikipedia.

Every day millions of users upload thousands of images to Wikipedia. Until now, the processing system needed a lot of resources and this limited the size of the images allowed.

VipsScaler is a new Mediawiki extension based on the very fast, free VIPS [image processing](#) system that has been developed by Dr Kirk Martinez from the University of Southampton and Dr John Cupitt from Imperial College London. Switching to VipsScalar has let Wikipedia remove many of its limits on image uploading as it processes large images quickly, using only a little memory.

Most image processing systems load the entire image into the computer's memory and then transform it in a series of steps, each of which needs another complete copy of the image being worked on. Complex operations on large images use large amounts of working memory.

VIPS takes a different approach. Images are chopped into small tiles and then passed and processed through all the processor cores, before being reassembled into their final form at the end. As it never has the whole image loaded, VIPS only requires a relatively small amount of memory. If the computer has more than one processing unit, VIPS can quickly make copies of the network and give one copy to each processor, making images flow even faster.

This unusual design is because of the history of VIPS. It began life in the early 1990s when computers were more than 1,000 times smaller and slower than they are now, but Dr Martinez and Dr Cupitt still needed to be able to process large images.

Dr Martinez, from Electronics and Computer Science at the University of Southampton, says: "It turns out that the design is now ideal for systems which need to manage thousands of requests for images. In the early days, speeding up the processing of one 1GByte image from minutes to one minute was the aim. Problems now are often to process millions of images or terabytes of images.

"Wikipedia used to solve this by simply banning large PNG images, now they allow them. Hopefully other formats will follow, for example VIPS can downsize large tiff [images](#) efficiently too."

Provided by University of Southampton

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