

The last decade has seen a large body of work in the area of gradient domain image processing, including the removal of lighting effects, high dynamic range compression, image compositing, and image content creation.

All these approaches require solving a large linear system giving the image that best-fits the gradient constraints.

(Animation)

The question that we're interested in answering is "Can these approaches work when the image is too large to fit into memory?"

In tomorrow's presentation, we will show you that the answer is "yes".

Using our method, we can take the gigapixel image shown here, composed of 100s of photographs...

(Animation)

And perform gradient-domain stitching to obtain *this* seamless image.

Non-linearly attenuating the gradients from this image and solving the system again...

(Animation)

We can bring out details in the low contrast areas.

(Animation)

The advantage of our approach is that it allows us to process images with incredible amounts of detail, all on a modest laptop using just half a gigabyte of RAM.

(Animation)

For more information, please join us tomorrow morning.