

A Method for Refocusing Photos using Depth from Defocus

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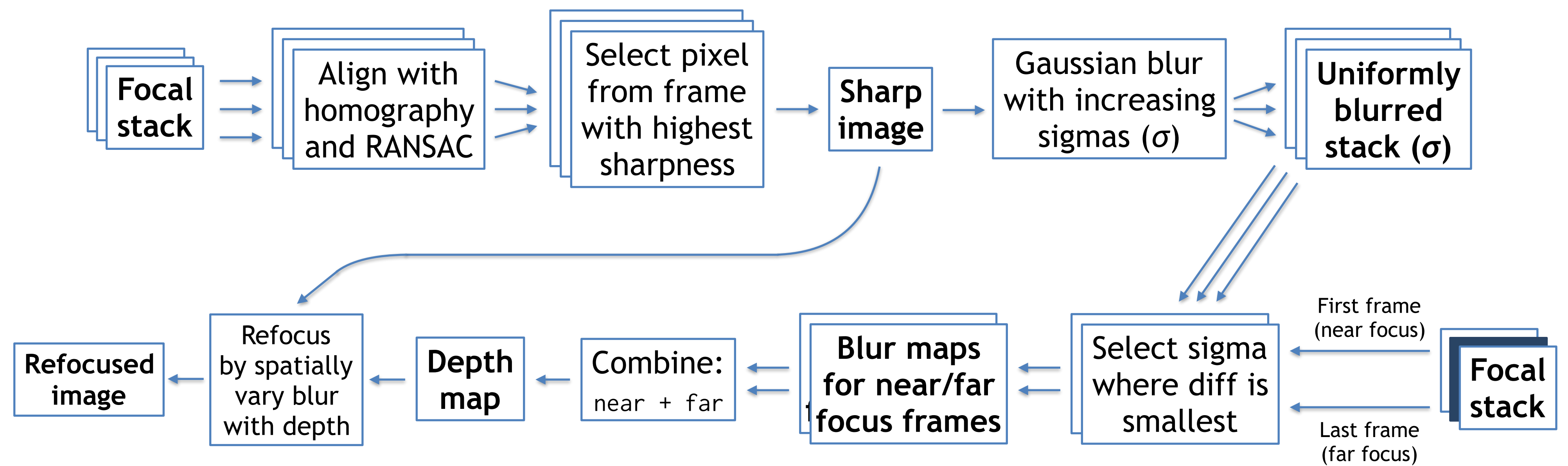
Motivation

- Depth information from single viewpoint
- Extract image that is sharp everywhere
- Adjust blur “look” after taking photo
- Uses normal camera, more accessible than light field



Image Processing Pipeline

Capture stack of frames from same viewpoint while varying focal depth “through” scene



Related Work

Most DfD methods estimate physical depth by estimating aperture, focal length and frame focal depths.

- *Depth from Focus with Your Mobile Phone*, S. Suwajanakorn, C. Hernandez, S. Seitz
- *An investigation of methods for determining depth from focus*, J. Ens, P. Lawrence

Here we approximate depth by blurriness directly to reduce computation time, which is good enough for refocusing purposes. The major drawback is that the depth map does not contain physical distances to objects in the scene.

Experimental Results

