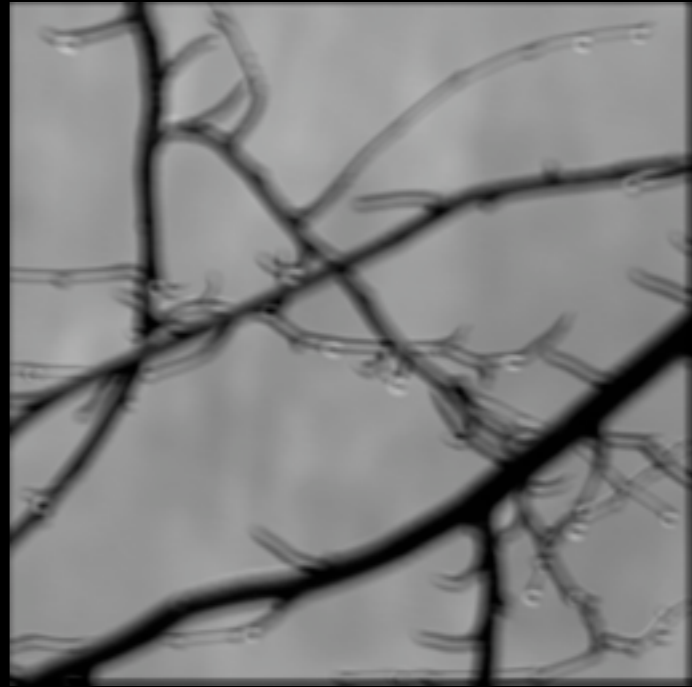


SVD Applications

CS3220—30 Mar 2009





gaussian 1.0; no noise



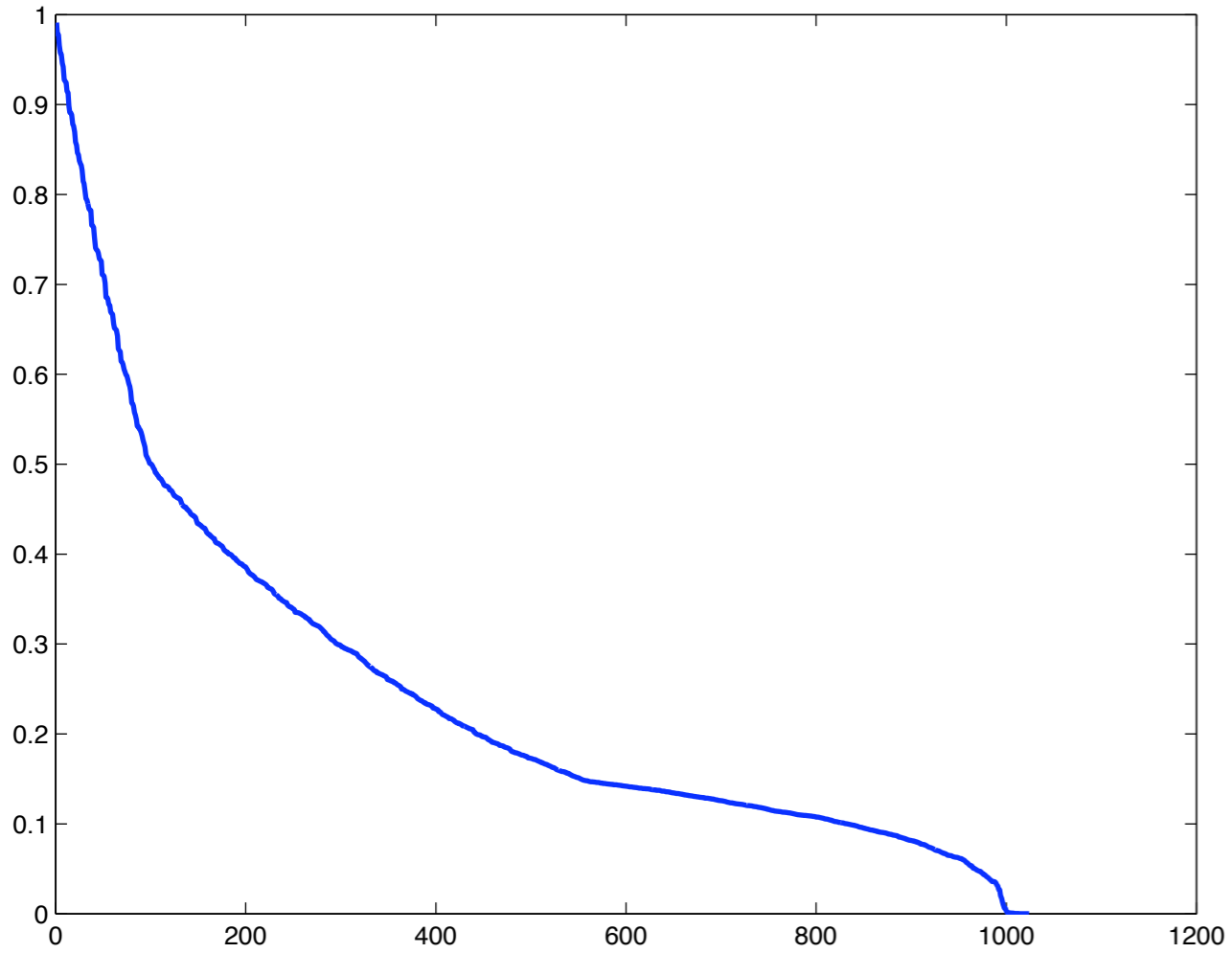
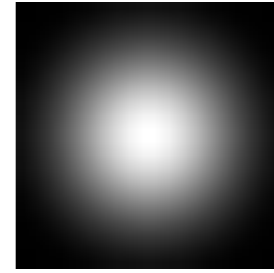
gaussian 1.0; noise 0.005



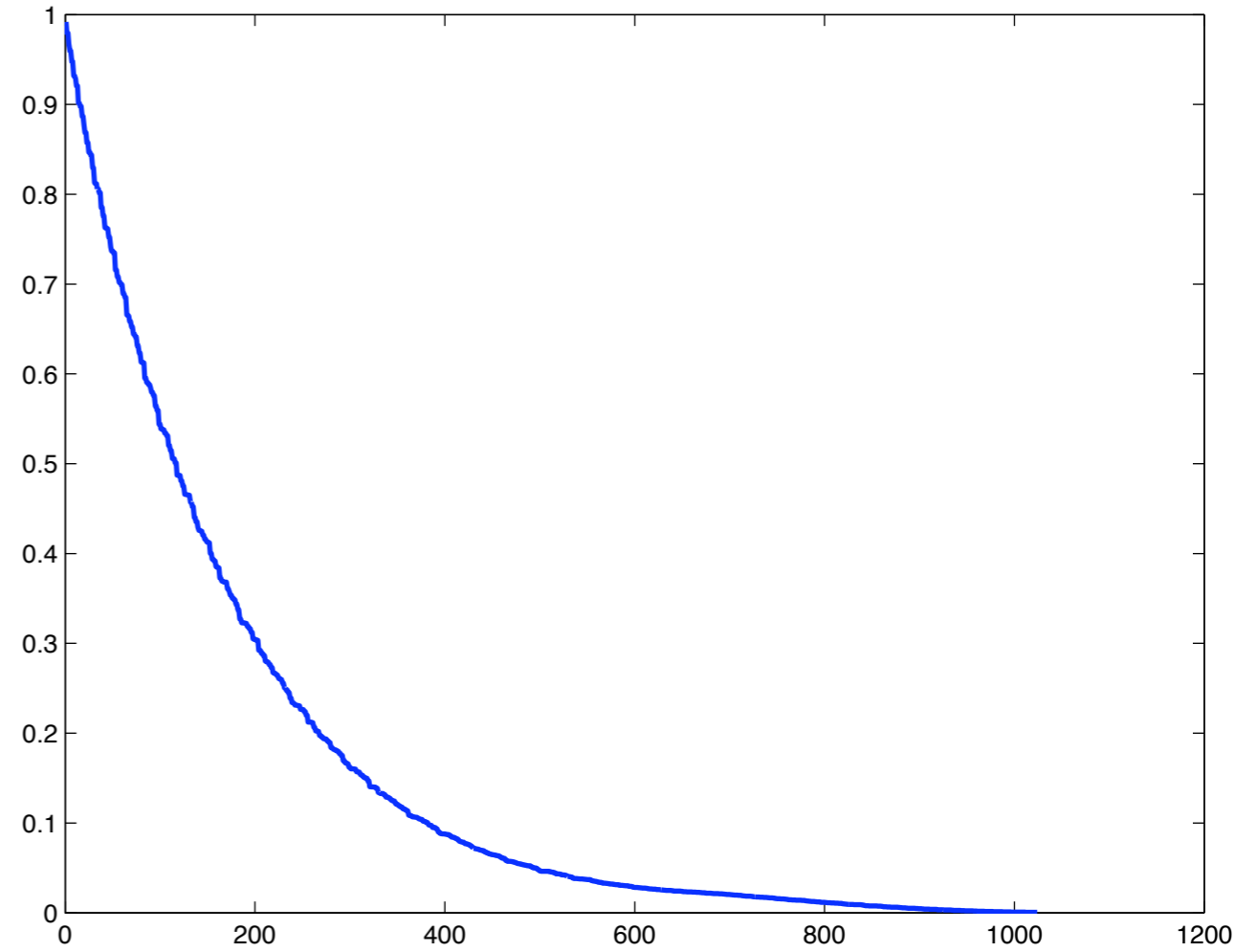
motion blur; no noise



motion blur; noise 0.005



motion blur



gaussian, stdev = 1.0

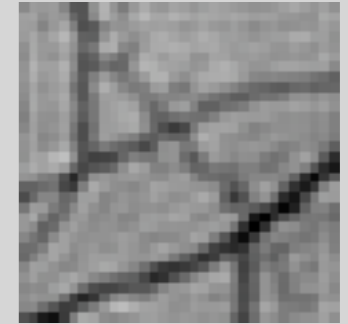
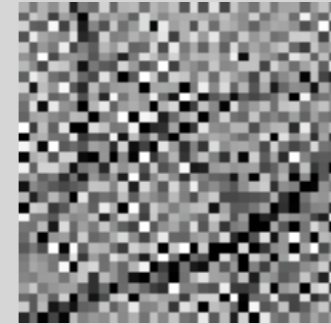
singular value vs. index, 32x32 inverse problem



gaussian 1.0; no noise; r = 1024



gaussian 1.0; noise 0.005; r = 1024, 900, 400



motion blur; no noise; r = 1024



motion blur; noise 0.005; r = 1024, 990, 550

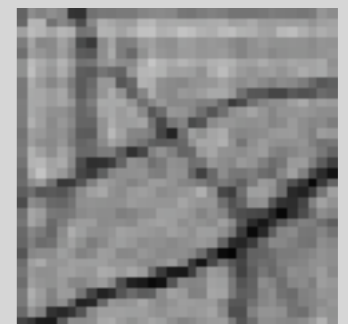
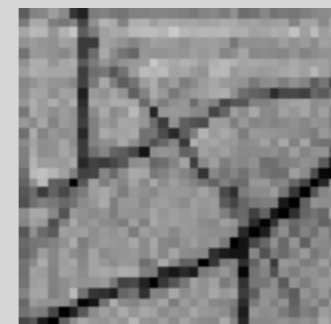




Figure 1 High quality single image motion-deblurring. The left sub-figure shows one captured image using a hand-held camera under dim light. It is severely blurred by an unknown kernel. The right sub-figure shows our deblurred image result computed by estimating both the blur kernel and the unblurred latent image. We show several close-ups of blurred/unblurred image regions for comparison.

[Shan, Jia, and Agarwala, *SIGGRAPH 2008*]