Gaussian Filter

The Gaussian filter
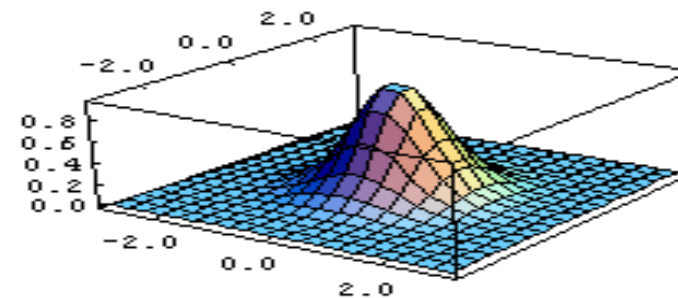
$$\frac{1}{16} \begin{array}{|c|c|c|} \hline 1 & 2 & 1 \\ \hline 2 & 4 & 2 \\ \hline 1 & 2 & 1 \\ \hline \end{array}$$
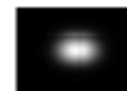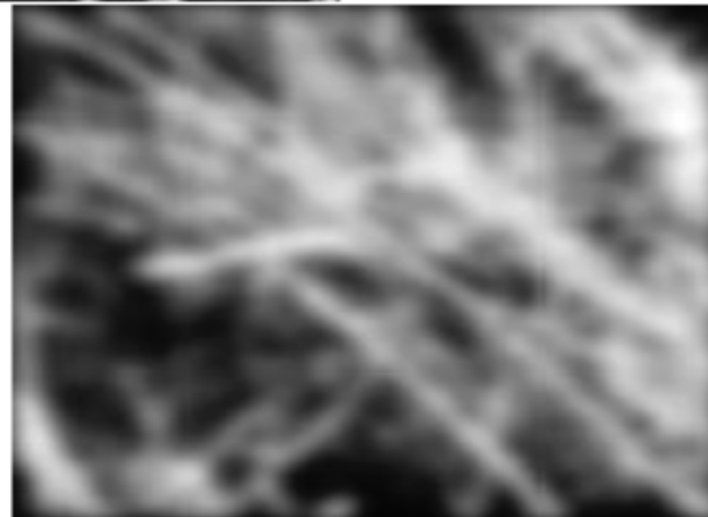
A Gaussian kernel gives less weight to pixels further from the center of the window

$$h(u, v) = \frac{1}{2\pi\sigma^2} e^{-\frac{u^2 + v^2}{\sigma^2}}$$

This kernel is an approximation of a Gaussian function

Gaussian filtering versus mean filtering

How would you create a shadow effect?
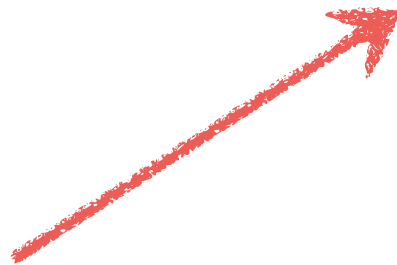
How would you create a shadow effect?

CMU → CMU

Overlay

CMU

Gaussian blur

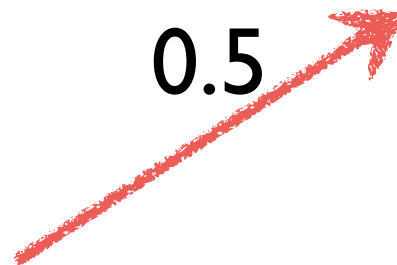# How would you create a soft focus effect?

How would you create a soft focus effect?

0.5

0.5

Gaussian blurred

Tilt Shift Effect

How would you create a (super low-budget) tilt-shift effect?

How would you create a (super low-budget) tilt-shift effect?

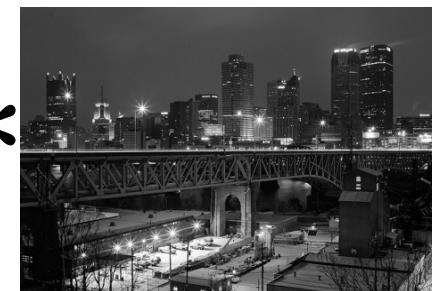weight   Gaussian blurred   1.0 - weight   Original

$*$ $+$ $*$ $=$

Tell me everything wrong with this wannabe tilt-shift image