



Figure 9.2: *Sparse connectivity, viewed from below*: We highlight one input unit, x_3 , and also highlight the output units in \mathbf{s} that are affected by this unit. (*Top*) When \mathbf{s} is formed by convolution with a kernel of width 3, only three outputs are affected by \mathbf{x} . (*Bottom*) When \mathbf{s} is formed by matrix multiplication, connectivity is no longer sparse, so all of the outputs are affected by x_3 .