

# Receptive fields

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# Receptive fields

- Can input  $\mathbf{x}_{abc}$  affect output  $\mathbf{z}_{ijk}$  ?

input: 3 x 3 x 1



Conv 2x2



output: 2 x 2 x 1



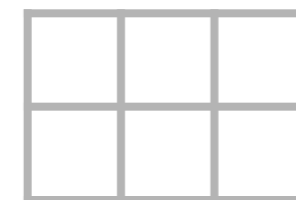
# Receptive fields

- Can input  $\mathbf{x}_{abc}$  affect output  $\mathbf{z}_{ijk}$  ?

input: 3 x 4 x 1



Conv 2x2



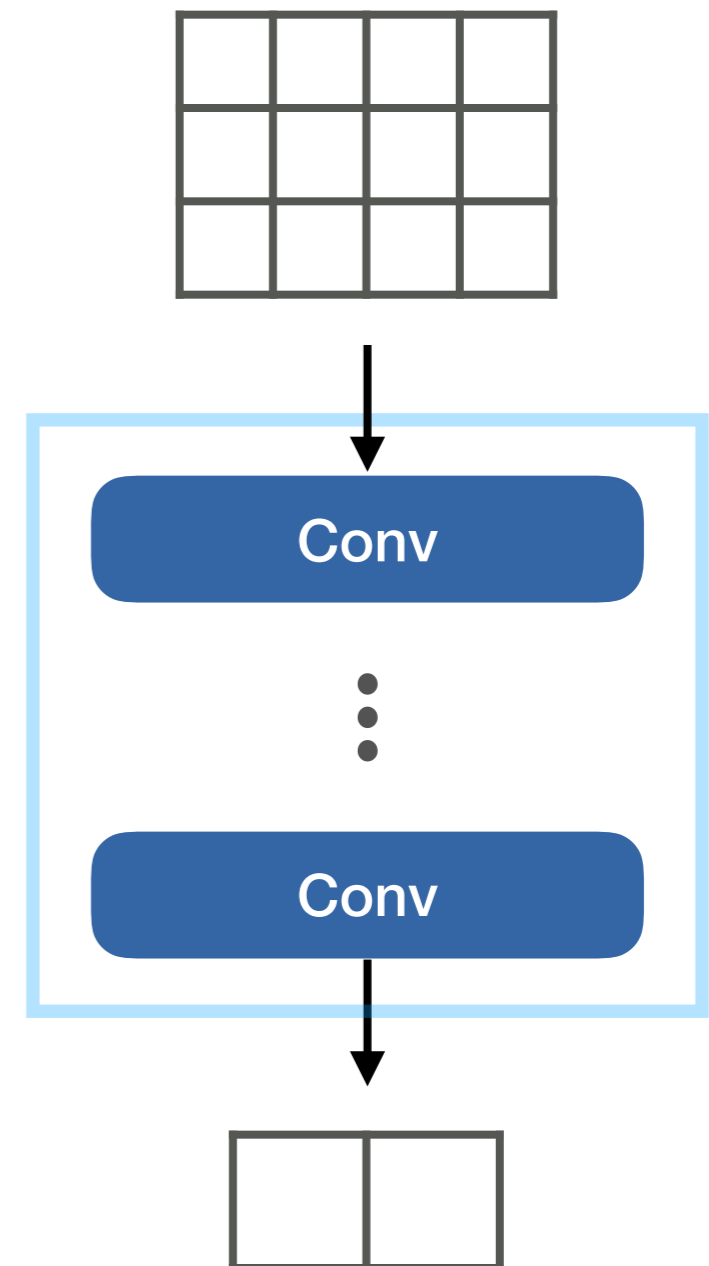
Conv 2x2

output: 2 x 2 x 1



# How do we compute the receptive field

- Option 1: lots of math
- Option 2: Computationally
  - Feed a image of 0s to the network
  - Change a single element to NaN
    - See output changes



# Structure of receptive field?

