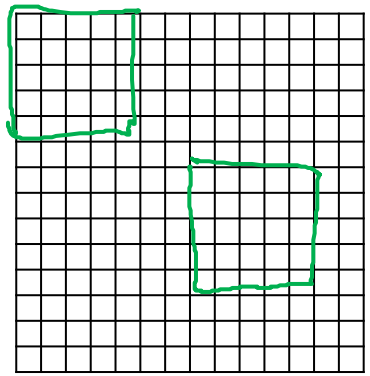
deeplearning.ai

Convolutional Networks in 1D or 3D

1D and 3D generalizations of models

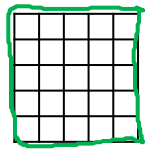
Convolutions in 2D and 1D



2D input image

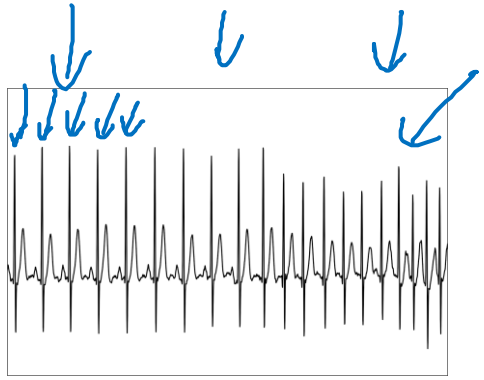
14×14

*



2D filter

5×5



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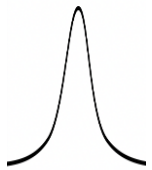

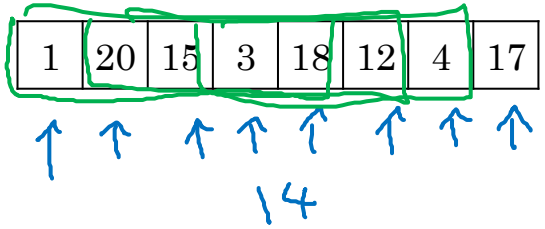

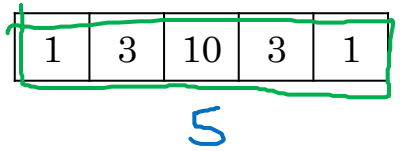

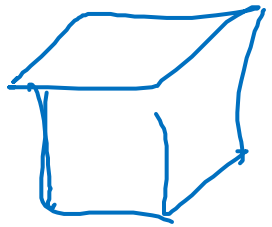

$14 \times 14 \times 3 \quad * \quad 5 \times 5 \times 3$

$\rightarrow 10 \times 10 \times 16$

$10 \times 10 \times 16 \quad * \quad 5 \times 5 \times 16$

$\rightarrow 6 \times 6 \times 32$

$14 \times 1 \quad * \quad 5 \times 1$

$\rightarrow 10 \times 16$

$10 \times 16 \quad * \quad 5 \times 16$

$\rightarrow 6 * 32$

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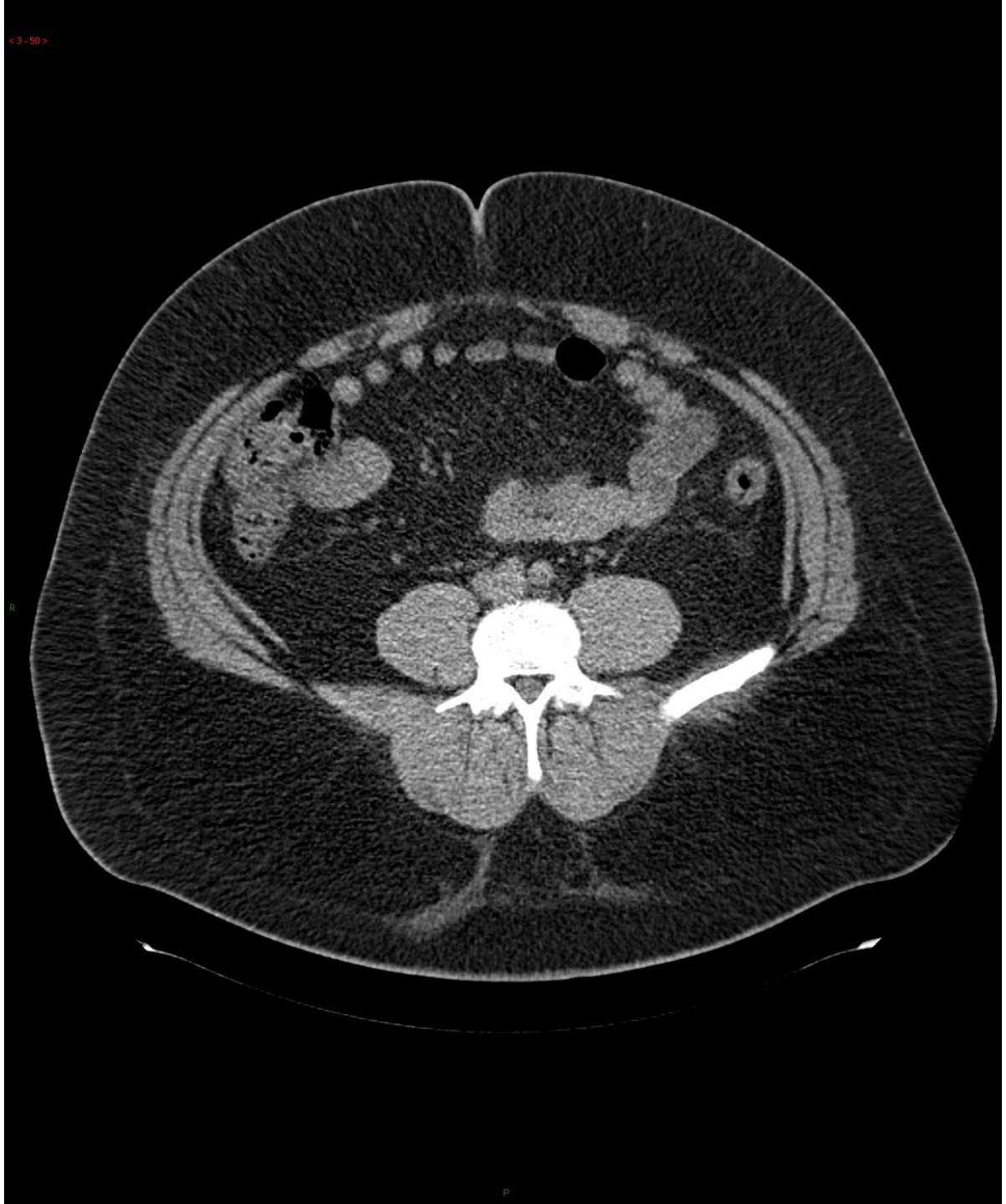
3D data



Andrew Ng

3D data

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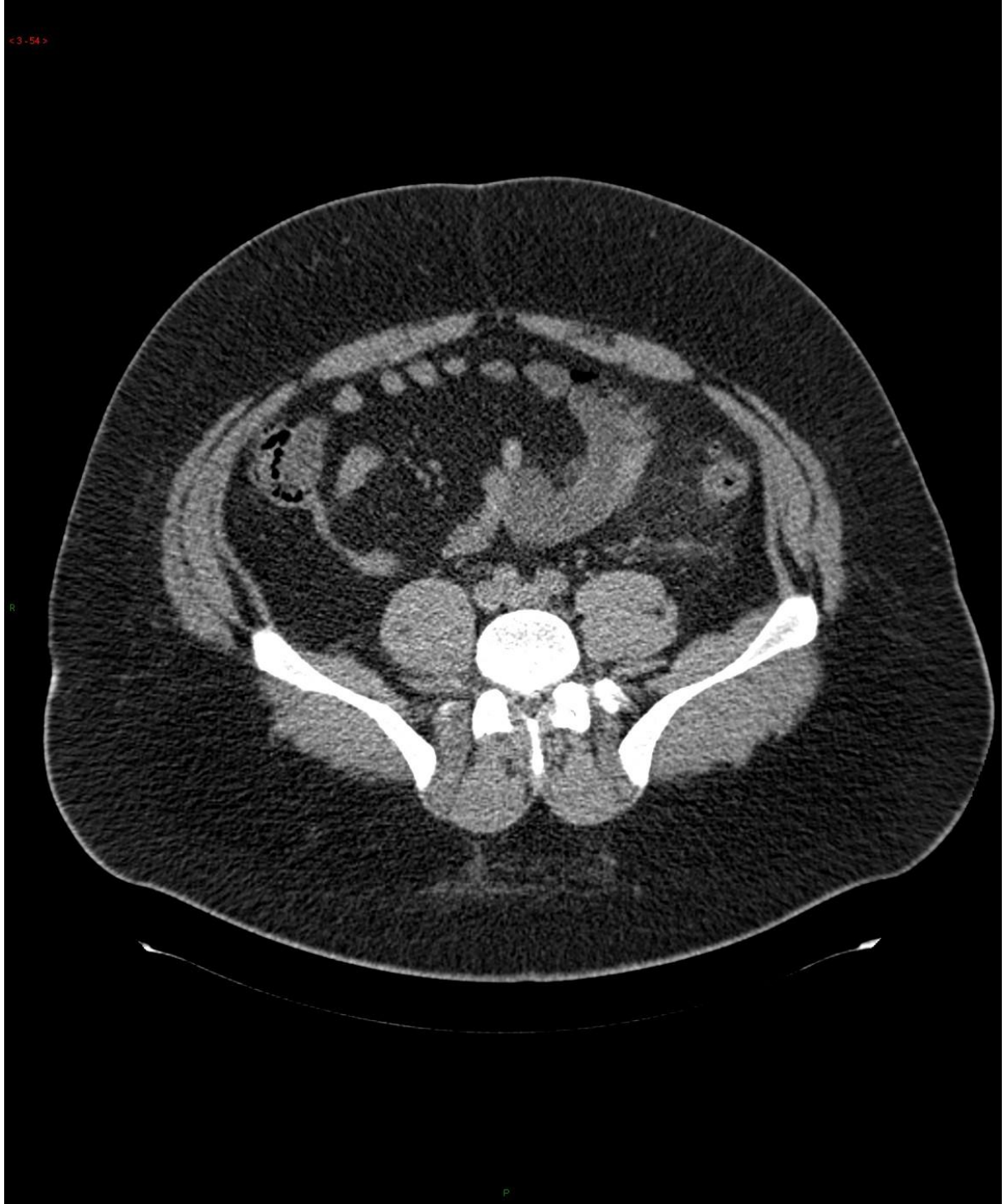
3D data

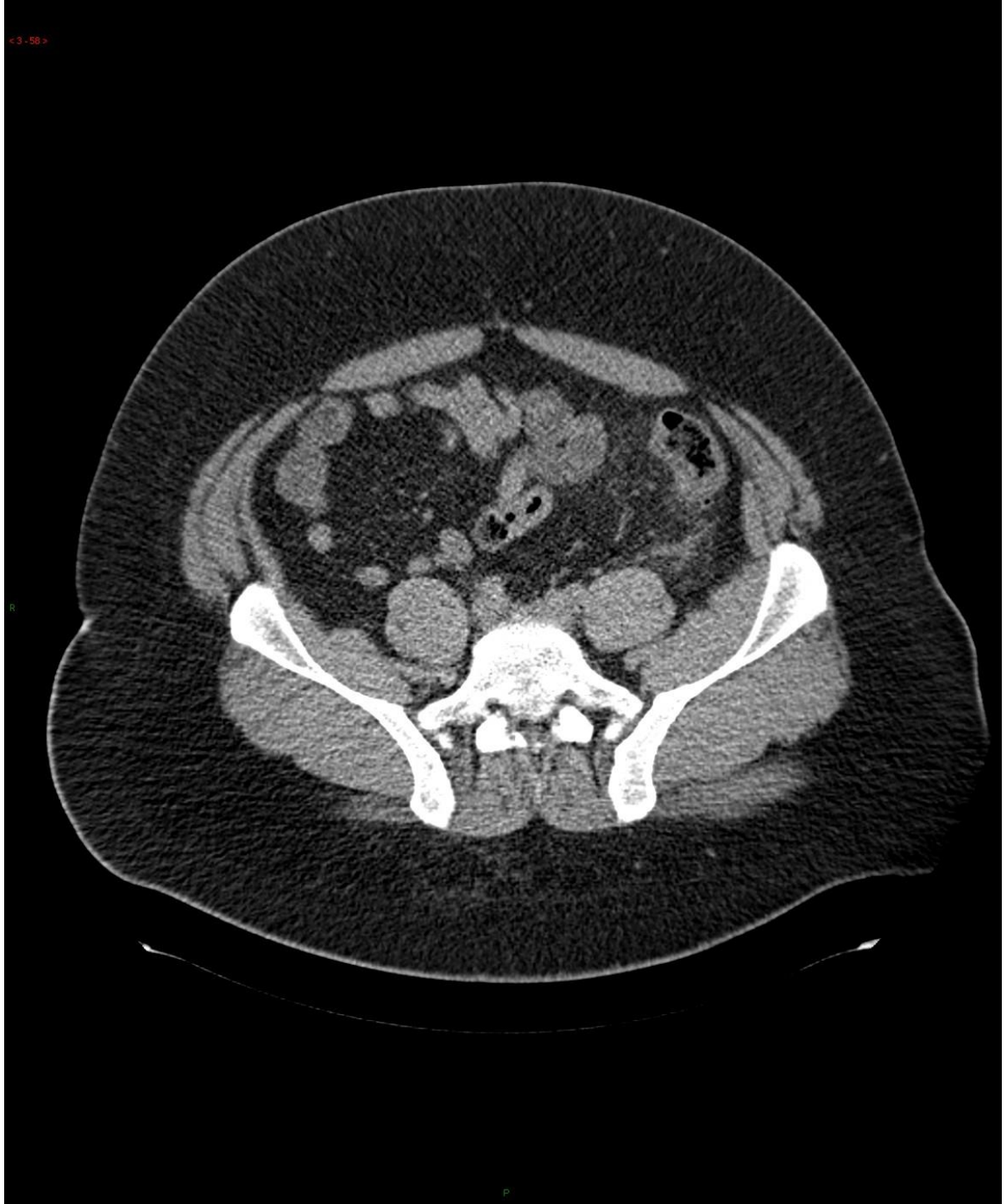


Andrew Ng

3D data

Andrew Ng

3D data



Andrew Ng

3D data

Andrew Ng

3D data

Andrew Ng

3D data

Andrew Ng

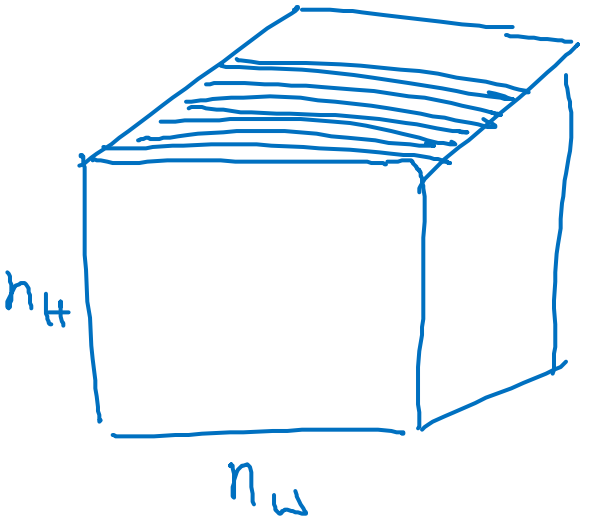
3D data

Andrew Ng

3D data

Andrew Ng

3D data



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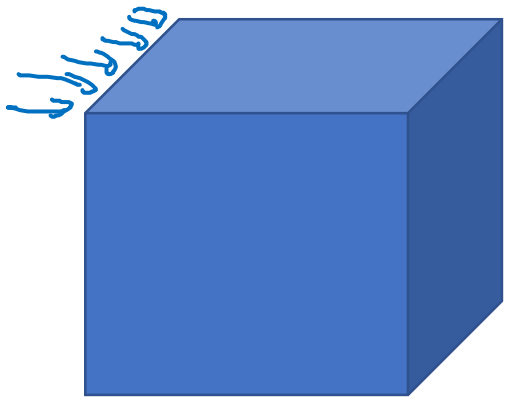
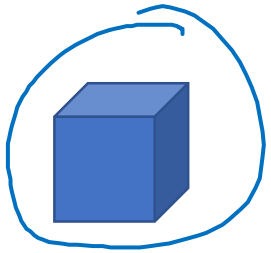
3D convolution



3D volume

*



3D filter

n_c

$14 \times 14 \times 14 \times 1$

$* \quad 5 \times 5 \times 5 \times 1$

16 filters.

$\rightarrow 10 \times 10 \times 10 \times 16$

$* \; 5 \times 5 \times 5 \times 16$

32 filters

$\rightarrow \quad 6 \times 6 \times 6 \times 32$