**Lecture 12 poll**

**Slide 17**

If you decide to simply modify your forward propagation code for a CNN to perform backpropagation, which of these steps would you take?

* Run all loops backwards
* Convert every operation of the kind y = f(z), to compute dz = dy \* f’(z)
* Convert every operation of the kind y = wz to the form dw += dy\*z, dz += dy\*w

**Slide 43**

“Upsampling” scans, also called transpose convolutions, are equivalent to upsampling the input maps by inserting zeros, and then performing a conventional convolution operation with stride 1, true or false?

* True
* False

Select the two correct statements below

* In a downsampling layer (with fewer outputs than inputs) the set of incoming weights in every column is identical
* In a downsampling layer, the set of outgoing weights in every column is identical
* In an upsampling layer (with more outputs than inputs) the set of incoming weights in every layer is identical
* In an upsampling layer, the set of outgoing weights in every column is identical

**Slide 67**

Select all that are true about backpropagation through upsampling layers

* When computing derivatives for the previous layer (l-1th layer) maps, mackprop computes the derivatives of *upsampled* layer l-1 maps. These must be downsampled.
* To obtain filter derivatives, the previous layer maps must be upsampled by inserting 0s before convolving them with l-th layer affine-derivative maps

**Slide 78**

To find the position of an object using a CNN, we need multiple output layers after the final convolution, one to identify the class and another to predict the position of the object

* True
* False