rbgirshick bug fix in receptive field size calculations 43a3f95 on 2 Apr 2014

1 contributor

74 lines (56 sloc) 2.26 KB

```
function receptive_field_sizes()

% compute input size from a given output size
f = @(output_size, ksize, stride) (output_size - 1) * stride + ksize;

% fix the pool5 output size to 1 and derive the receptive field in the input
out = ...
f(f(f(f(f(f(f(1, 3, 2), ...   % conv5 -> pool5
                  3, 1), ...   % conv4 -> conv5
                  3, 1), ...   % conv3 -> conv4
                  3, 1), ...   % pool2 -> conv3
                  3, 2), ...   % conv2 -> pool2
                  5, 1), ...   % pool1 -> conv2
                  3, 2), ...   % conv1 -> pool1
                  11, 4);      % input -> conv1

fprintf('pool5 receptive field size: %d\n', out);

out = ...
f(f(f(f(f(f(1, 3, 1), ...   % conv4 -> conv5
                3, 1), ...   % conv3 -> conv4
                3, 1), ...   % pool2 -> conv3
                3, 2), ...   % conv2 -> pool2
                5, 1), ...   % pool1 -> conv2
                3, 2), ...   % conv1 -> pool1
                11, 4);      % input -> conv1

fprintf('conv5 receptive field size: %d\n', out);

out = ...
f(f(f(f(f(1, 3, 1), ...   % conv3 -> conv4
              3, 1), ...   % pool2 -> conv3
              3, 2), ...   % conv2 -> pool2
              5, 1), ...   % pool1 -> conv2
              3, 2), ...   % conv1 -> pool1
              11, 4);      % input -> conv1

fprintf('conv4 receptive field size: %d\n', out);

out = ...
f(f(f(f(1, 3, 1), ...   % pool2 -> conv3
            3, 2), ...   % conv2 -> pool2
            5, 1), ...   % pool1 -> conv2
            3, 2), ...   % conv1 -> pool1
            11, 4);      % input -> conv1

fprintf('conv3 receptive field size: %d\n', out);

out = ...
f(f(f(1, 3, 2), ...   % conv2 -> pool2
          5, 1), ...   % pool1 -> conv2
          3, 2), ...   % conv1 -> pool1
          11, 4);      % input -> conv1

fprintf('pool2 receptive field size: %d\n', out);

out = ...
f(f(1, 5, 1), ...   % pool1 -> conv2
        3, 2), ...   % conv1 -> pool1
        11, 4);      % input -> conv1

fprintf('conv2 receptive field size: %d\n', out);
```

```
63
64  out = ...
65  f(f(1, 3, 2), ...   % conv1 -> pool1
66         11, 4);      % input -> conv1
67
68  fprintf('pool1 receptive field size: %d\n', out);
69
70  out = ...
71  f(1, 11, 4);      % input -> conv1
72
73  fprintf('conv1 receptive field size: %d\n', out);
```