Visual Abstraction as a Means of Image Category Generalization and Recognition Under Partial Occlusion

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Visual abstraction
Vision

- Visual abstraction
- Generalization/partial occlusion
Out of these images, which one(s) are tufas? *

☐ Image 1

☐ Image 2

☐ Image 3

☐ Image 4

Please explain why you chose the image(s) that you did. *

Long answer text

How confident are you in this answer? *

☐ Very confident

☐ Somewhat confident

☐ Eh

☐ Not too confident

☐ Not at all confident
“cirva”
Results
- More creativity + confidence
- Occlusion does not impair confidence
- Feature-based, not shape-based, classification
Overall results – cognitive science portion

- Template matching
- Abstraction and partial occlusion
Overall results—cognitive science portion

- Initial template matching
- Abstraction and partial occlusion
- Mental representations
Datasets
Network specifics

- Caffenet (bvlc_reference_caffenet)
  - Modified AlexNet trained w/ILSVRC12
- CUFS/CUFSF
- “face”/“not face”
Results

I0509 15:39:48.311864 2030813184 net.cpp:313] The NetState phase (0) differed from the phase (1) specified by a rule in layer data

Test net output #1: loss = nan (* 1 = nan loss)
Iteration 0, loss = nan