CS 523: Multimedia Systems

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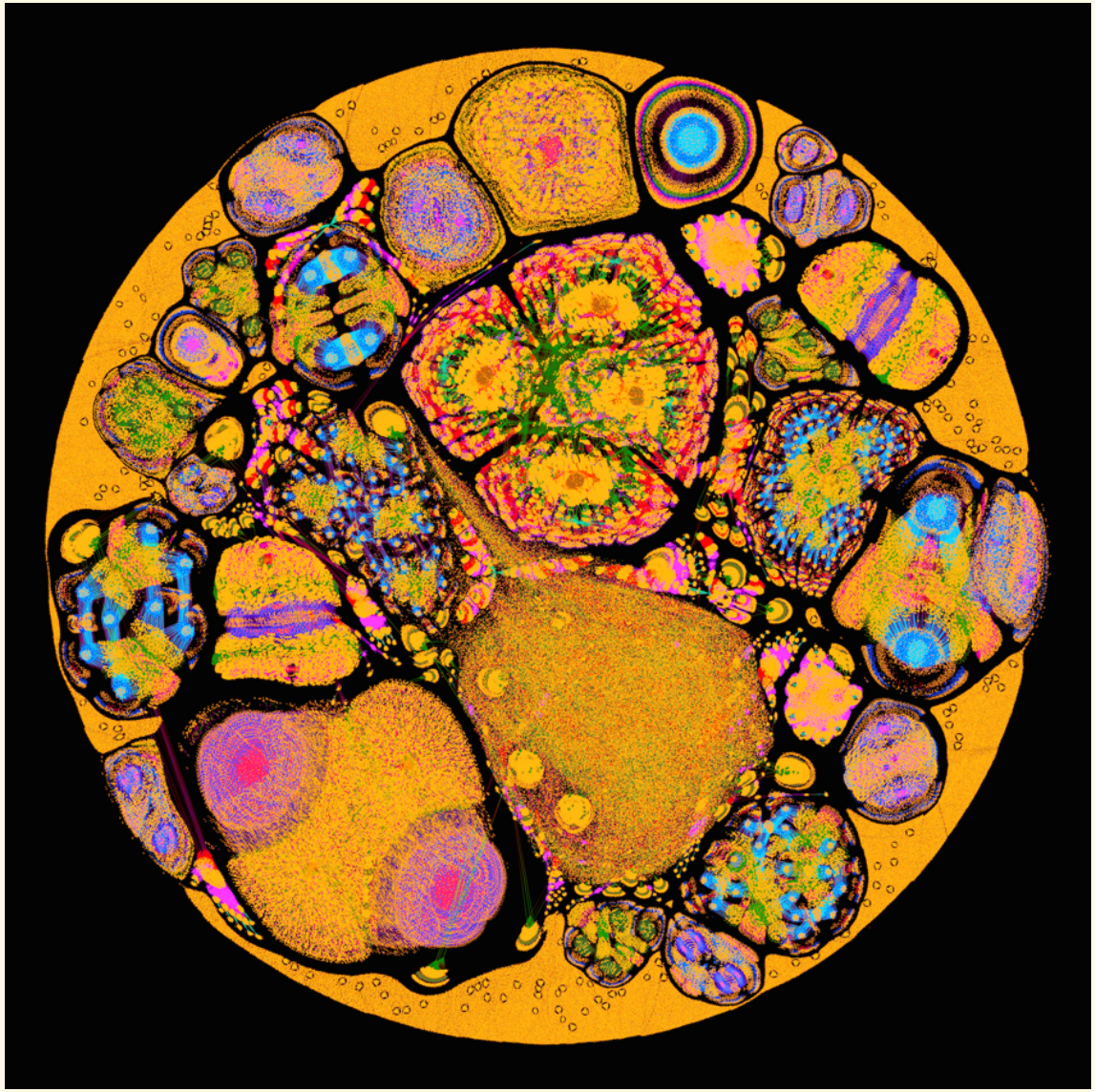
creativecoding.evl.uic.edu/courses/cs523

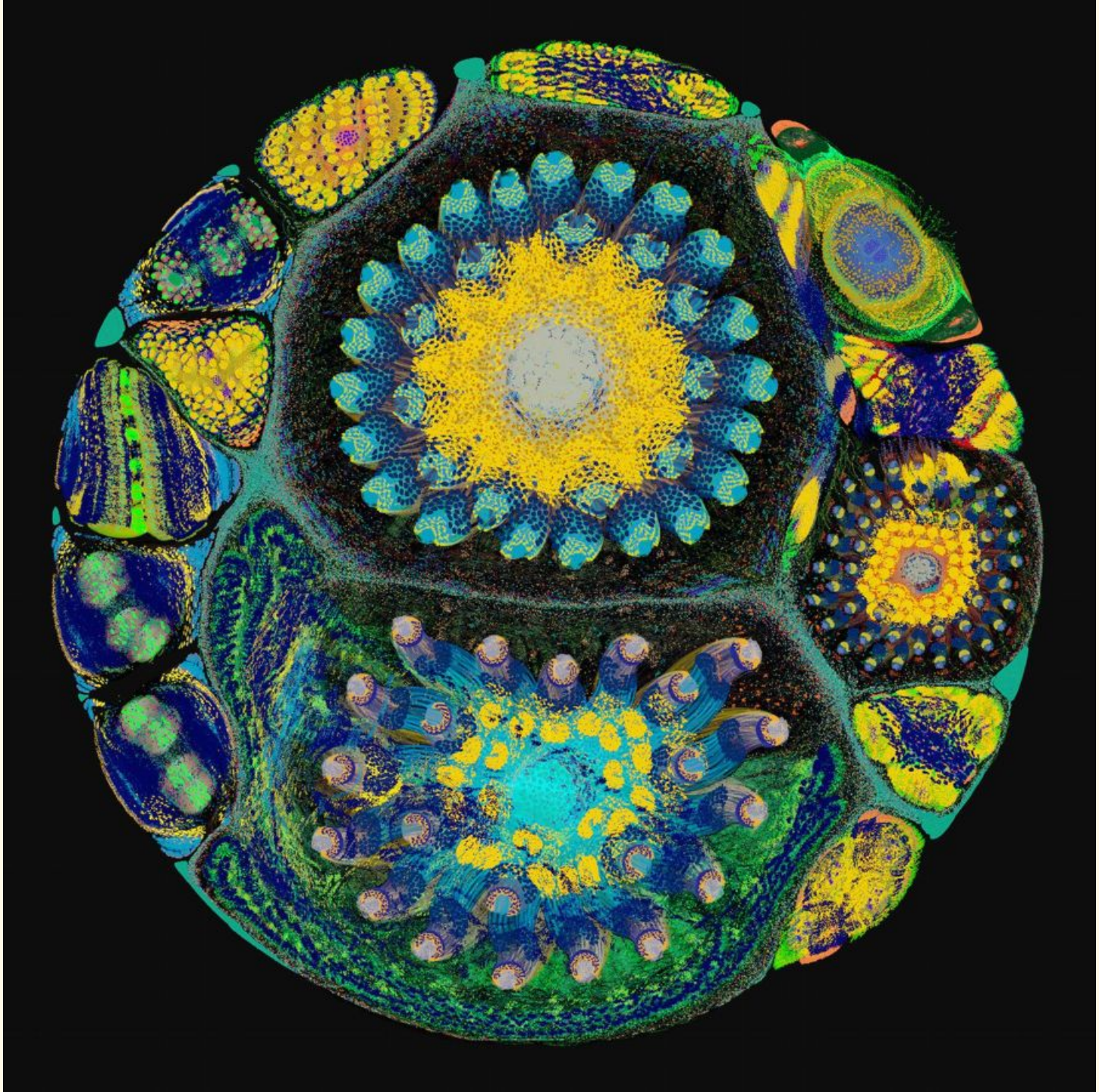
Graphcore “Brain scans”

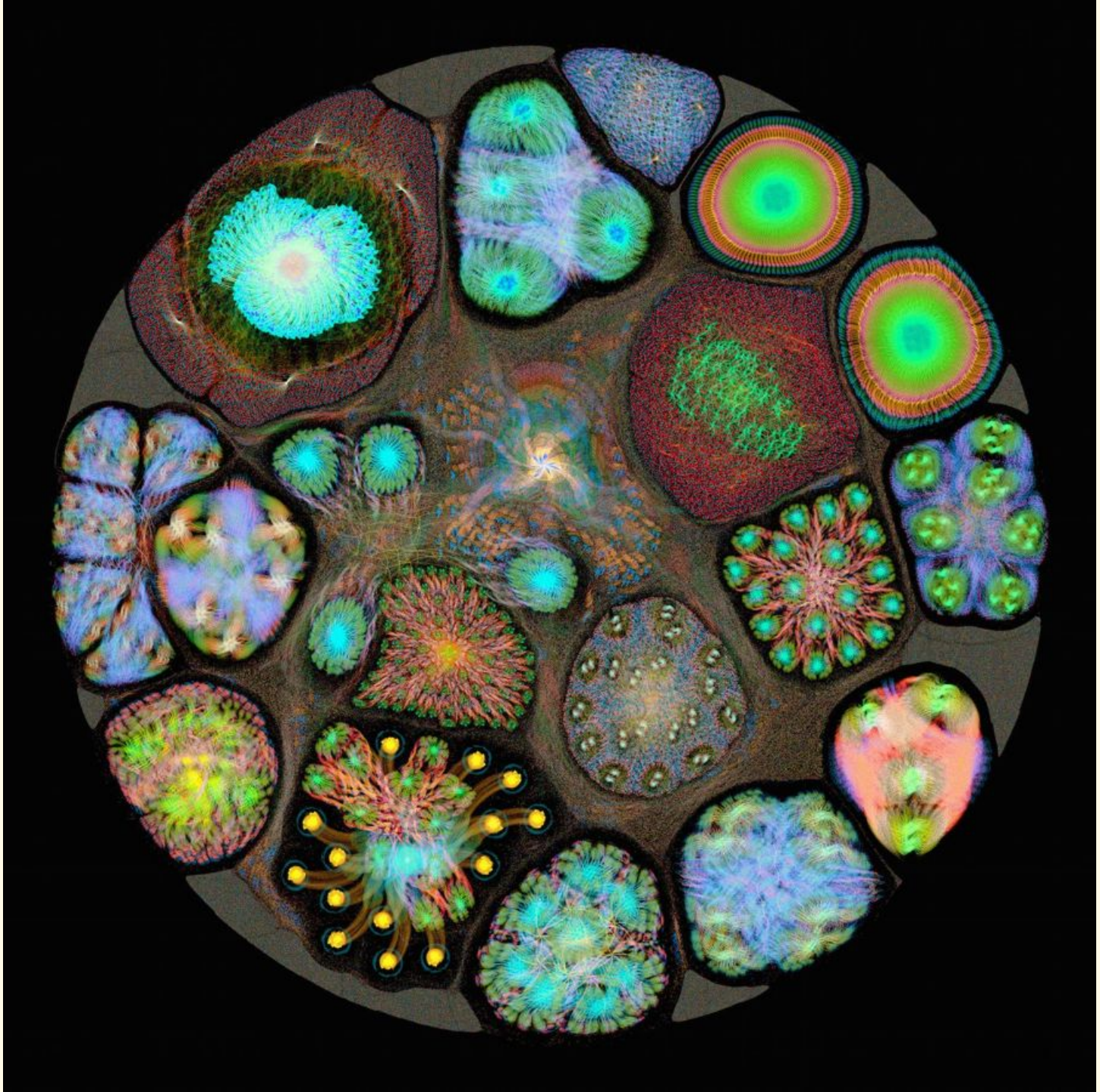
http://www.wired.co.uk/gallery/machine-learning-graphcore-pictures-inside-ai

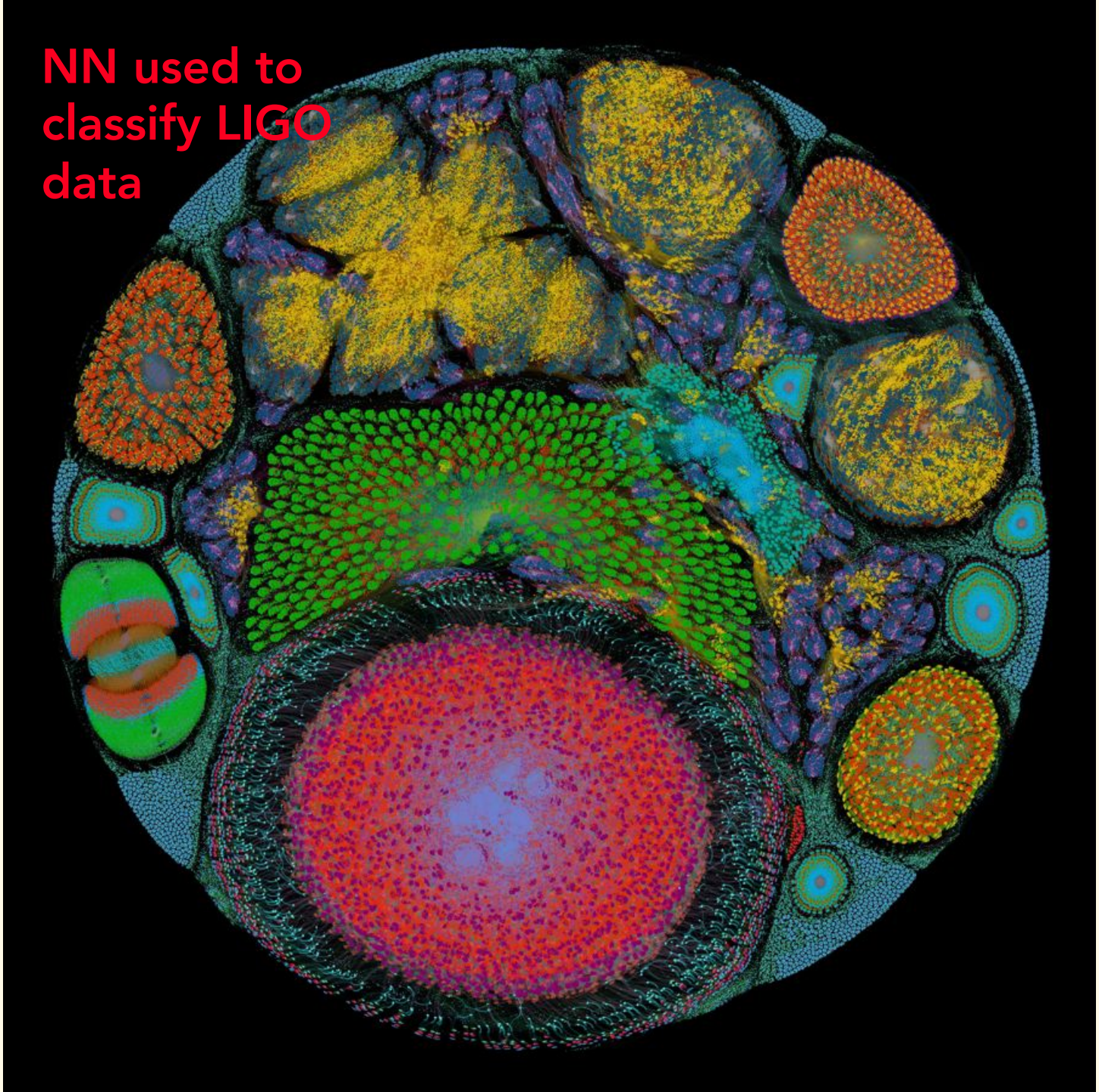
- Graphs are colored to highlight the density of computation

- Most images represent training or classification using Microsoft’s ResNet








NN used to
classify LIGO
data

Anton Woll Söder, “Reaction”

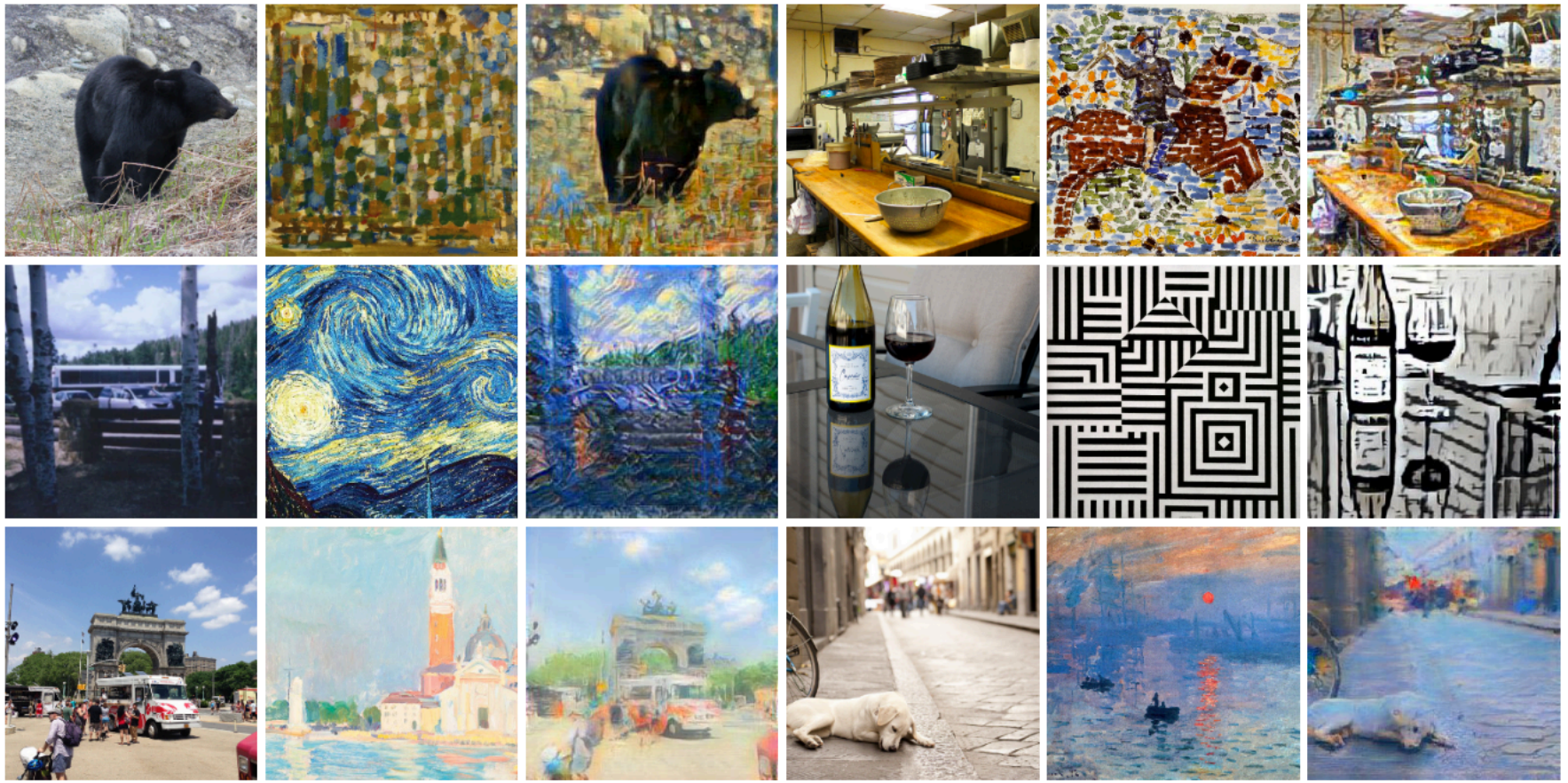
http://www.thisiscolossal.com/2017/02/reaction-an-experimental-particle-animation-by-anton-woll-soder/

AI Duet

https://aiexperiments.withgoogle.com/ai-duet

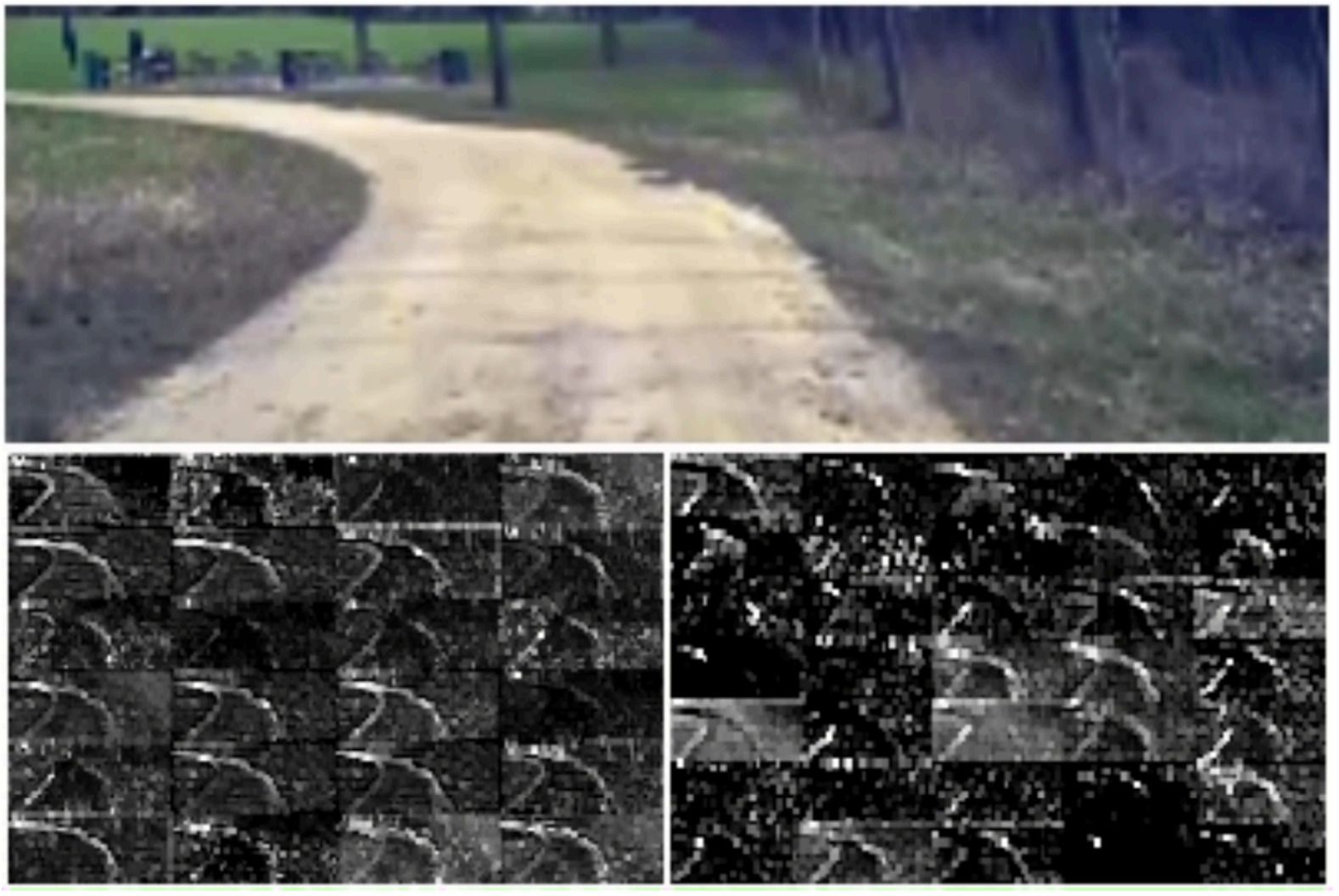
Arbitrary Style Transfer In Real-time

https://openreview.net/pdf?id=B1fUVMzKg



End to End Learning for Self-Driving Cars, Bojarski, et al. 2016

https://arxiv.org/pdf/1604.07316.pdf



Neural Network Learns to Select Potential Anticancer Drugs

http://www.dddmag.com/news/2017/02/neural-network-learns-select-potential-anticancer-drugs

"By using Generative Adversarial Networks (GANs) developed and trained to "invent" new molecular structures, there may soon be a dramatic reduction in the time and cost of searching for substances with potential medicinal properties.

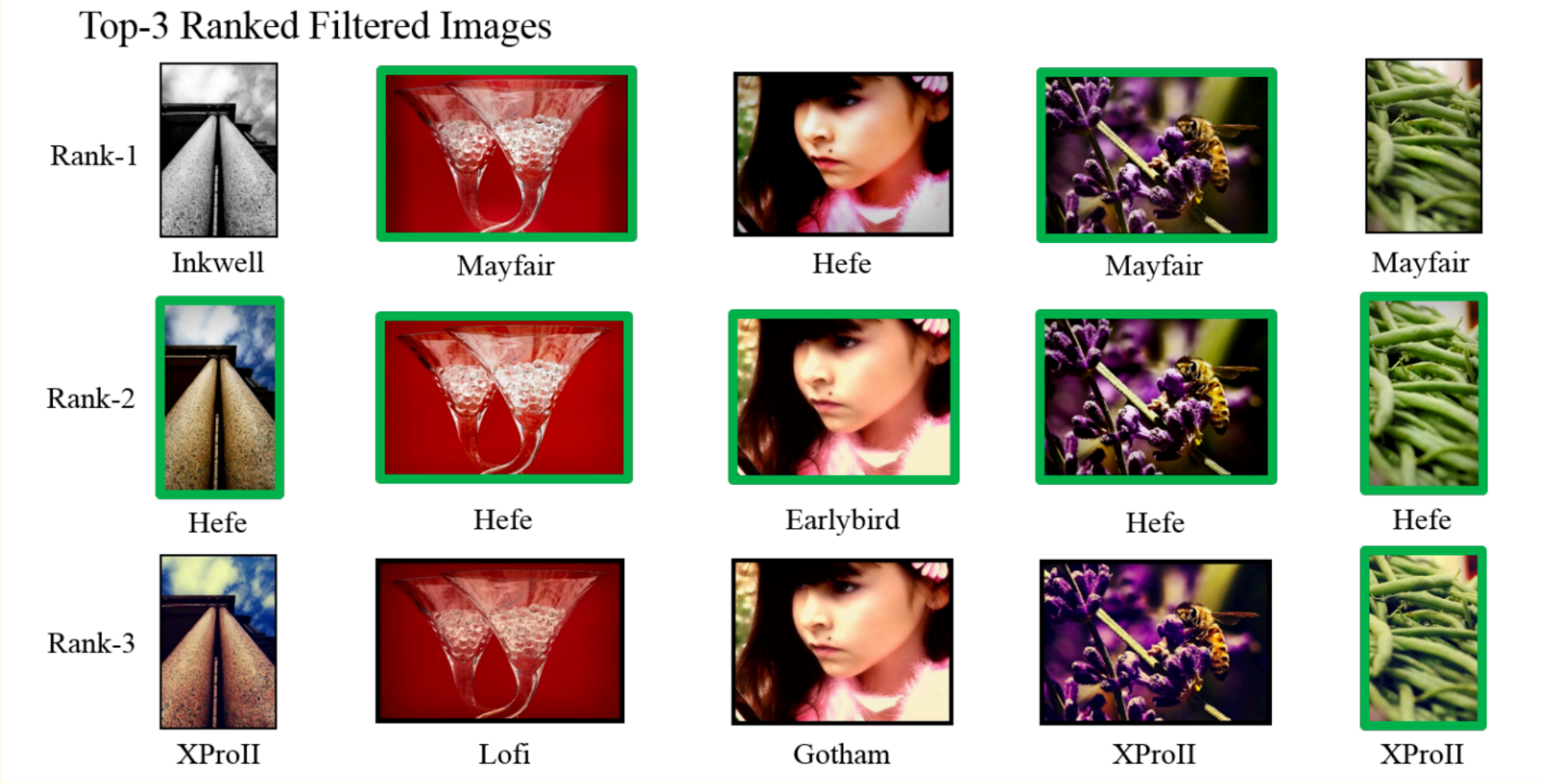
GANs are very much the frontline of neuroscience. It is quite clear that they can be used for a much broader variety of tasks than the simple generation of images and music. We tried out this approach with bioinformatics and obtained great results"

Automatic Handgun Detection, Olmos, et al. 2017

https://arxiv.org/abs/1702.05147

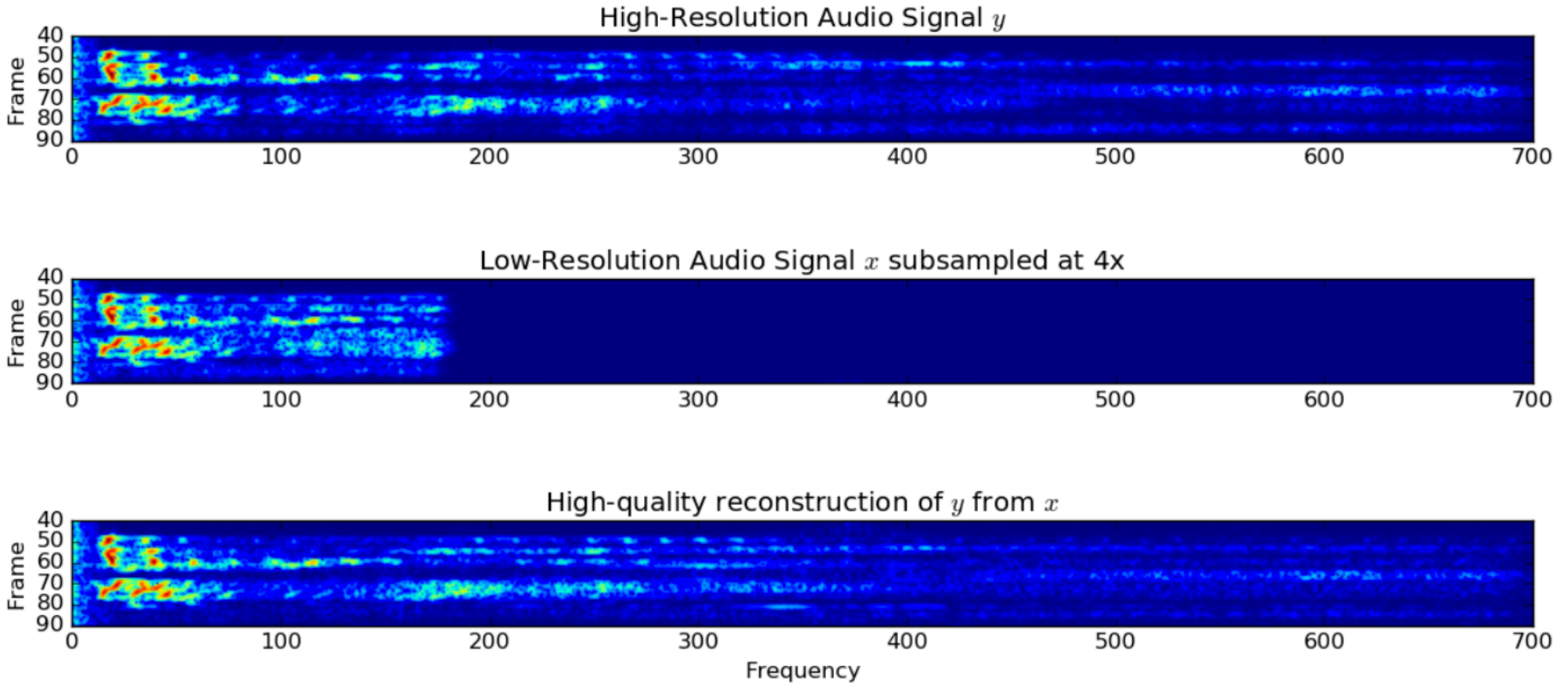
Photo Filter Recommendation, Sun, et al. 2016

https://arxiv.org/abs/1608.05339



Audio Super Resolution, Kuleshov, et al. 2017

https://openreview.net/forum?id=S1gNakBFx&noteId=S1gNakBFx

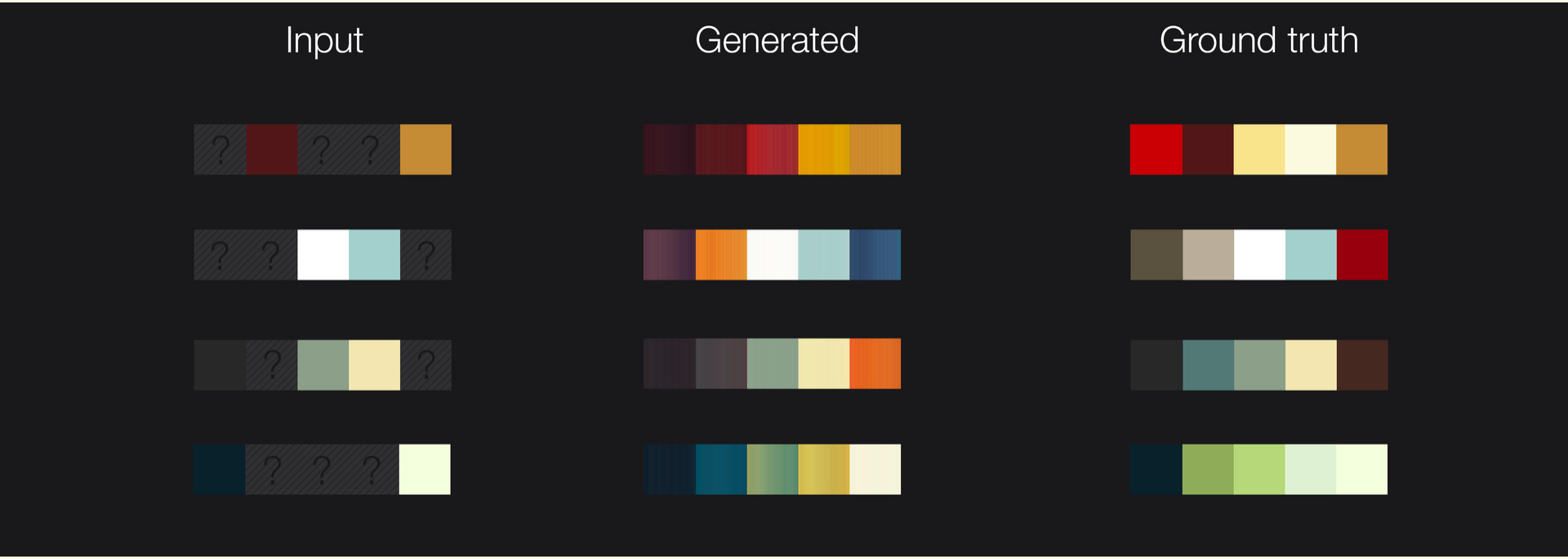


Visual Similarity

https://artsexperiments.withgoogle.com/xdegrees

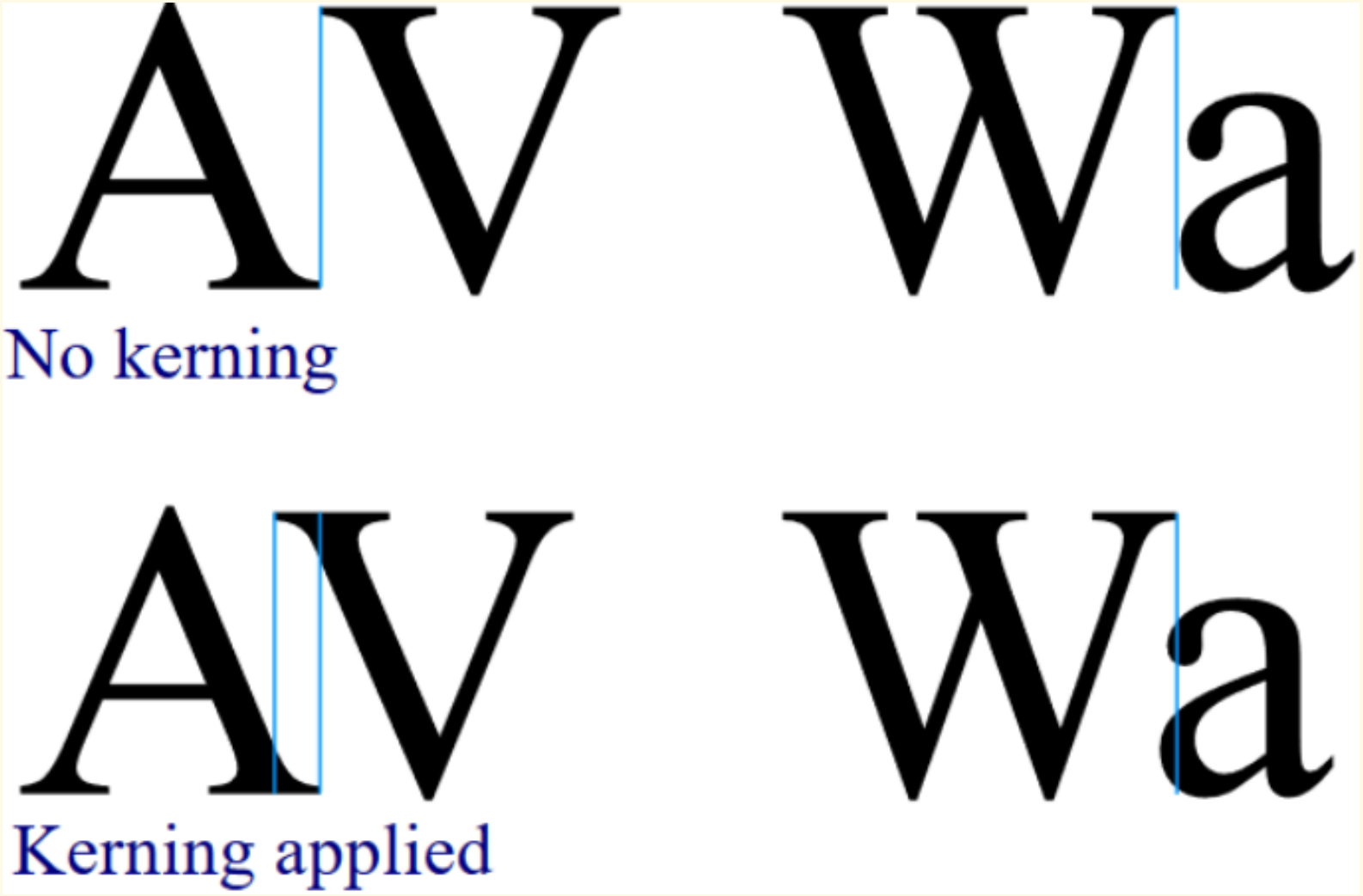
Color Palette GAN

http://colormind.io/



Deep Kern

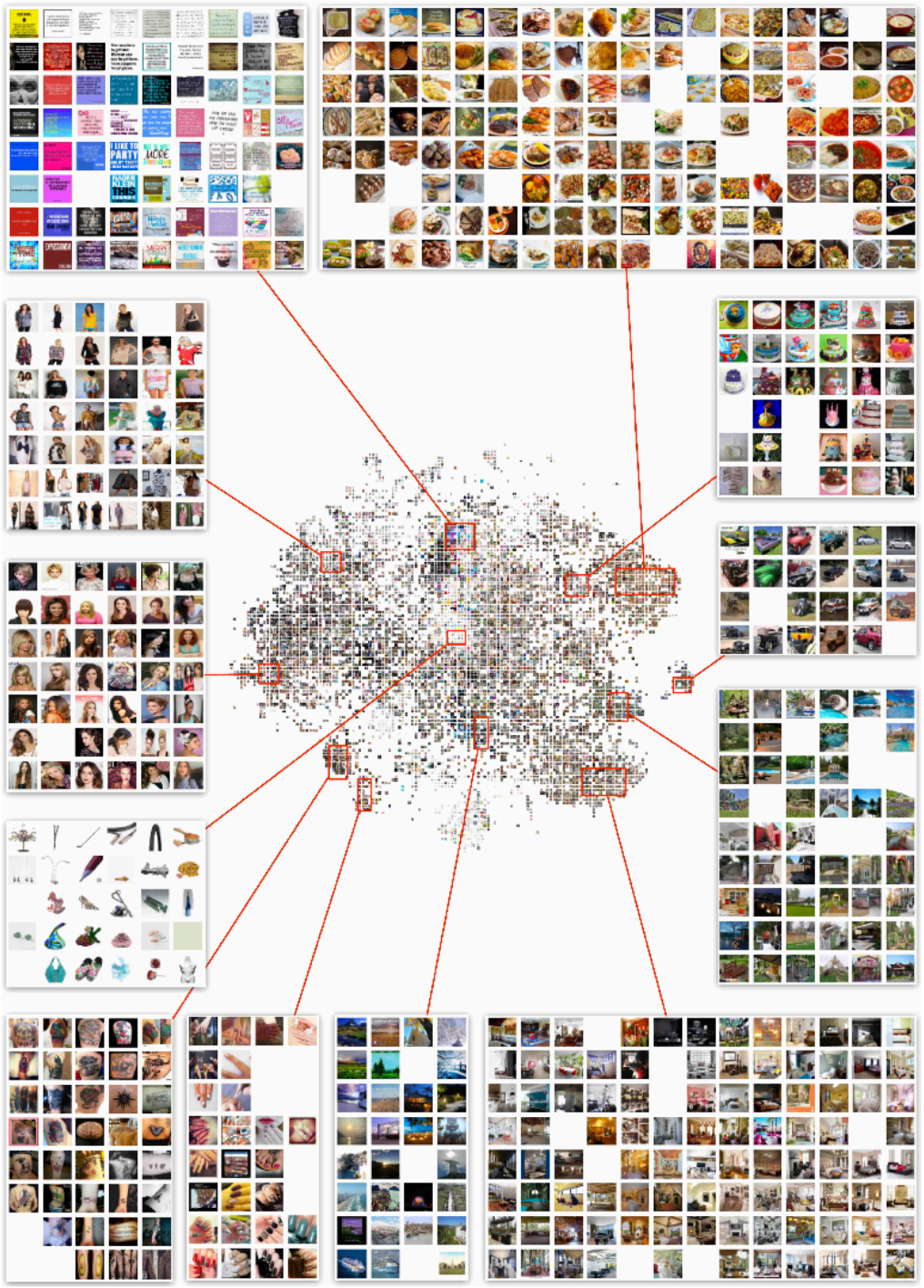
https://patrickgadd.github.io/feel-the-kern/



Visual Discovery at Pinterest

Zhai et al., 2017

https://arxiv.org/abs/1702.04680



Next Week

- Project 2 presentations!
- Project documentation:

  GitHub, video, installation instructions, etc.