Seeing with Machines

Collections Within (and Beyond) the Walls of the National Gallery of Art

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InceptionV3 Neural Network

- Neural network designed to recognize objects and textures from photographs

- Instead of asking for simple labels ("horse", "ball", "car"), stop it early and instead use its internal calculations to cluster images by something close to "visual similarity"

- An alternate way to organize visual data
  - Think of Aby Warburg's *Mnemosyne Atlas*, but even more idiosyncratic
All paintings (with images) in the National Gallery of Art

Computation & visualization by Lingdong Huang and Golan Levin
The Sea of Portraiture
| The Sea of Portraiture (plus Robert Motherwell?) | InceptionV3 really wants abstract art to be representative of the real world... |
George Catlin and... still lifes?
Jacob van Hulsdonck's Wild Strawberries in a Wan-Li Bowl (c. 1620)
Nudes of all kinds
A fixation on altarpieces
A collection of landscapes... mostly...
This can be very evocative and serendipitous...

But does this really help tell us anything?
Not only close looking, but also distant viewing

- Can we use this approach to compare collections of images at scale?
- The Samuel H. Kress collections (~390 paintings at NGA, over 1,000 paintings in other collections)
- The Rosenwald Collection (~25,000 artistic prints and drawings at NGA, ~250 books at Library of Congress)
The Rosenwald Collection by medium

Computation & visualization by Sarah Reiff Conell
All prints and drawings (with images) in the National Gallery of Art
+ Illustrations from Rosenwald books @ Library of Congress
Archipelago of Typography
Draped figures
Palladio’s *I quattro libri dell'architettura* (and other geometric graphics)
Freydal's Jousts and Tournament of Emperor Maximilian I ... and Robert Crumb comics
NGA Prints & Drawings (non-Rosenwald)

NGA P&D (Rosenwald)

LoC Rosenwald

NGA P&D (Kress)
All paintings (with images) in the National Gallery of Art
+ Paintings (with public images) from Kress Collection
What we’ll be publishing:

• InceptionV3 feature sets for all the NGA, LoC, and Kress images discussed here, for others to explore different subsets and spatializations of these visual similarities