

Finding traditional forms of inspiration using Machine Learning concepts

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For my project, the big question I wanted to explore was the reconciliation of traditional forms of artistic inspiration with modern artificial intelligence. How would an artist or musician carry their traditional technique forward into the world of machine learning, and what kinds of art would be produced as a result?

One of the more successful and straightforward artistic ideas that have been developed utilizing machine learning is *style transfer*, where the style of one photograph or painting is transferred onto another target image. The target image is then redrawn in the chosen style. The possible combinations of target image and style are near endless, and the products of style transfer algorithms can be quite unique and imaginative in surprising ways. Various web applications exist that allow ordinary users to try style transfer for themselves. The website I used was DeepArt, developed in Germany.

Musical composers have always been inspired by visual images, real images as well as paintings. Most famously perhaps is Modest Mussorgsky's *Pictures at an Exhibition*, a suite in ten movements inspired by a walk through an art gallery. Each movement relates to a specific painting and attempts to capture the mood and essence of the painting.

I would apply a similar concept to my own project, with a twist. My project is a short piano suite inspired by images, but unlike *Pictures*, the images I chose were different style transferred versions of the same painting, variations on a theme. The painting I chose was the famous "Great Wave off Kanagawa" by Katsushika Hokusai, the iconic Japanese painting of a tidal wave near an island. In addition I chose three other paintings to act as style models for the style transfer algorithm: "Seated Nude" by Pablo Picasso, "Composition vii" by Wassily Kandinsky, and "White on white" by Kazimir Malevich. The original painting and three variations structure my composition into four sections. I wanted to capture the idea of theme with a variation, so while the tone shifts with the highly varied textures of the paintings, the internal material is still rather consistent.

Painting information:

The Great Wave off Kanagawa
(1823): **Katsushika Hokusai**

Seated Nude (1909): **Pablo Picasso**

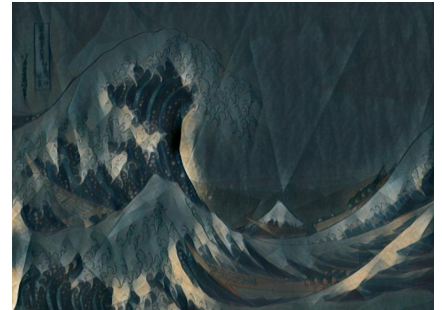
Composition vii (1913): **Wassily
Kandinsky**

White on white (1918): **Kazimir
Malevich**

DeepArt Style Transfer



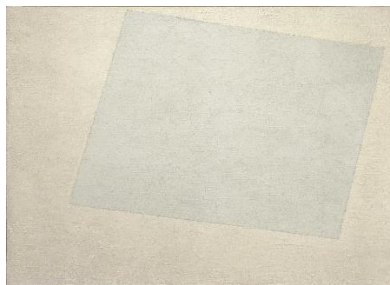
“Seated Nude”
1909
Pablo Picasso



“The Great Wave off Kanagawa”
1823
Katsushika Hokusai



“Composition VII”
1913
Wassily Kandinsky

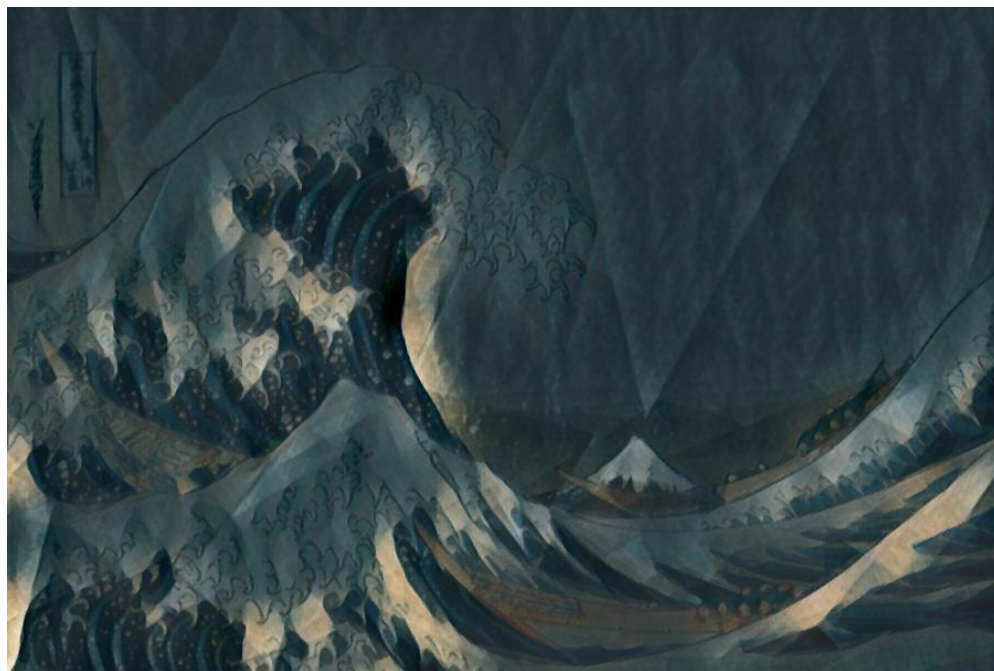


“White on white”
1918
Kazimir Malevich





“The Great Wave off Kanagawa”



Style Transferred with Picasso's “Seated Nude”



Style transferred with Kandinsky's "Composition vii."



Style transferred with Malevich's "White on white".