GauGAN: Transcript

[Speaker 1] "Let's try to darken it up a bit with some cloud… now that's wonderful"

[Speaker 1] "What if we were to change all of that to rock?"

[Speaker 2] "Let's click on 'rock', and then we can replace the mountain with rock"

[Speaker 1] "Let's try waterfalls just by pulling water down from the top there.."

[Narrator] Wouldn't it be great if everybody could be an artist? If we could take our ideas and turn them into compelling images?

This technology allows us to create a smart paintbrush so that if you want to create a new picture, you can just draw the shapes of the objects that you want, and the neural network can fill in all the details.

If we add a water feature, the network is able to add reflections, not because we told it that, but because it learned it.

Or, if we change the ground to be covered in snow, then it knows that the sky needs to be a different color.

I really think this technology is going to be great for architects, designers, people making virtual worlds to train robots and self-driving cars.

The input   to this model is something we call a segmentation map. It's like a coloring book map that describes here's where a tree is, here's where the sky is, here's where the ground is. It doesn't have any details, but the neural network is able to fill in all the textures, shadows and colors based on what it's learned from a large database of real-world images.

[Speaker 1] I would like to see the tree reflecting in that pond.

[Narrator] The real advance here is that we are able to synthesize images with a lot more diversity and fidelity than we were able to in the past.

I really think this technology is going to be great for the dreamers of the world.