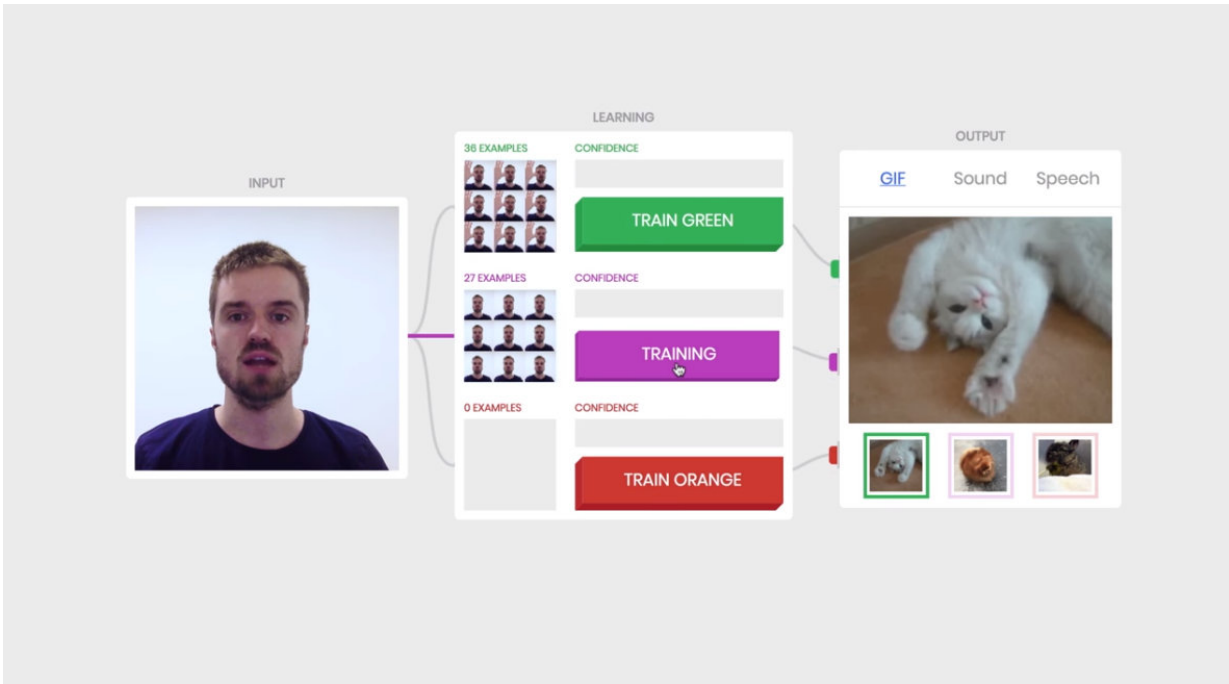


Machine learning: Experiment, learn, enjoy

October 13 2017, by Nancy Owano



(Tech Xplore)—Now anyone can inch up close to machine learning. It's teachable in the form of an AI experiment "made with some friends from Google."

You, yes you, can [teach](#) a machine (forget coding) using your camera. You can do it live in the browser.

Specifically, step into their invite to explore the Teachable Machine and you get to train a [neural network](#) locally on your device, without sending images to any server. No images are stored on Google servers—the training happens locally on your device.

"Hi, I'm Lasse. Hi, I'm Andreas." A video shows how it is done. "Over here is the input, my camera," said Andreas. Over to the right, he said, you see three classes, green, purple and orange. Over to the far right, the output, where the machine responds to you.

He shows first how to teach the Green class to recognize when he puts his hand up. He trains a purple class when he puts his hand down. Crazyface, orange class.

Bars can switch to speech, so when he holds his and hand up, for example, it says hello and, when hands down, it says awesome.

[The orange may look more red than orange on your screen, by the way.]

As for work tips, the Teachable Machine site told anyone wanting to get this going that "your machine doesn't have an understanding of higher level concepts, like faces or objects. It's learning through the examples you give it. So if it's not working the way you want, you might want to click the x to reset your classes and try out different approaches."

That's when the little setbacks are valuable. "Seeing what works and what doesn't is one way to explore how machine learning works."

Todd Weiss in *ITPro*: "One participant used the Teachable Machine to make their hand say 'moo,' while others have performed other demonstrations. Visitors can use the record [button](#) to share their contributions on social media with the hashtag #teachablemachine."

Lasse said this was built with `deeplearn.js` for training models locally in the browser, which makes it run so fast. Nice: It works on mobile devices too, so you can work with the camera on your phone.

The `deeplearn.js` is an open-source library for web developers to train and run machine learning models locally in the browser. The Teachable Machine site said the code for this experiment is open-sourced on [GitHub](#).

The "friends from Google" are from Støj, Use All Five, and Creative Lab and PAIR teams at Google.

[Støj](#) is a Copenhagen-based creative coding studio. Use All Five is a Los Angeles-based [design](#) studio

PAIR stands for People + AI Research.

The experiment resonates with the PAIR team's goals. They said earlier this year that they are open sourcing new tools, creating educational materials and publishing research to "spread the power of AI to as many people as possible."

Martin Wattenberg and Fernanda Viégas, both from the Google Brain team, wrote in July: "The past few years have seen rapid advances in [machine learning](#), with dramatic improvements in technical performance—from more accurate speech recognition, to better image search, to improved translations. But we believe AI can go much further—and be more useful to all of us—if we build systems with [people](#) in mind at the start of the process."

One of the research questions that they have posed: "Can we democratize the technology behind AI?"

More information: [teachablemachine.withgoogle.com/
www.blog.google/topics/machine ... -no-coding-required/](https://teachablemachine.withgoogle.com/www.blog.google/topics/machine...-no-coding-required/)

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