

Tutorial 7 - DeepPurpose(A2/A3) & Transfer Learning

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Friday 6th November, 2020

Disclaimer: Recorded Tutorials will be Publicly Posted

Goal: to create a companion series of applied machine learning tutorials for the 100MLB text, these tutorials will be publicly posted as a YouTube playlist. **Privacy Preservation:**

- Ask questions in the chat¹
- Keep video off

Note: If the above *hinders your ability to learn \wedge violates your privacy*, please let me/Dr. Green know ASAP and video will be post-processed accordingly.

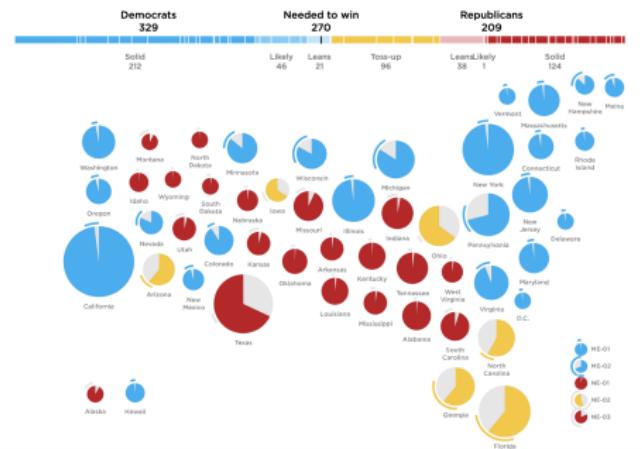
¹I encourage unmuted/voice-based questions at any time, but know that this isn't explicitly privacy-preserving

ML Weekly

Recent news events from the ML community

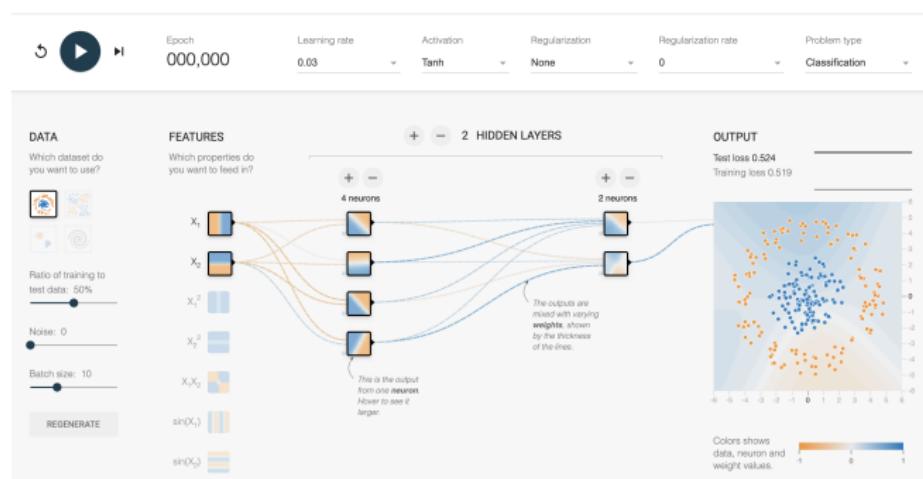
ML Weekly

1. (NLP) PollyVote: Ottawa-based AI-powered startup predict elections (Advanced Symbolics, Inc.)



ML Weekly

1. **(NLP)** PollyVote: Ottawa-based AI-powered startup predict elections (Advanced Symbolics, Inc.)
2. **(DL)** Feature Visualization: How neural networks build up their understanding of images

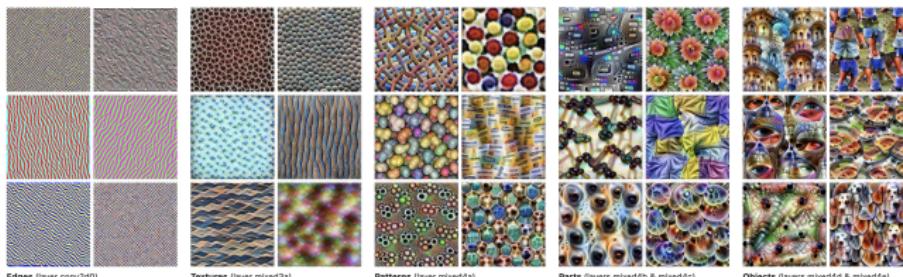


ML Weekly

1. **(NLP)** PollyVote: Ottawa-based AI-powered startup predict elections (Advanced Symbolics, Inc.)
2. **(DL)** Feature Visualization: How neural networks build up their understanding of images
3. **(Vision)** Tinker With a Neural Network Right Here in Your Browser

Feature Visualization

How neural networks build up their understanding of Images



Feature visualization allows us to see how GoogLeNet [1], trained on the ImageNet [3] dataset, builds up its understanding of images over many layers. Visualizations of all channels are available in the [annotation](#).

Tutorial Overview

We will cover three main things:

1. Course Project: Assignment2 & Assignment3

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3. Tutorial 7 - Transfer Learning

Course Project: The Grand Reveal...Drumroll plz....

COURSE PROJECT: DEEP LEARNING TO PREDICT COVID-19 ANTI-VIRAL DRUGS

SYSC 4906 - ASSIGNMENT 2

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November 6, 2020

ABSTRACT

You (and your partner) are the lead machine learning researcher(s) among an interdisciplinary team of scientists and engineers during the COVID-19 pandemic. Your team has decided to dedicate their time and resources to identifying candidate anti-viral drugs that may reduce severity of COVID-19 symptoms. You have already built a deep learning model that can predict the likelihood to test a host cell with COVID-19 symptoms. Now you need to identify which specific drug(s) your team of medical researchers can use to combat the virus. You must generate a deep learning model that can predict which of a collection of drugs is most likely to cure COVID-19 and provide them with a short list of candidate drugs to test in the lab. Time is ticking! Lives are at stake! Can you help bring an end to the pandemic?!

Course Project: The Grand Reveal...Drumroll plz....

COURSE PROJECT: DEEP LEARNING TO PREDICT COVID19 ANTIVIRAL DRUGS

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ABSTRACT

You (and your partner) are the lead machine learning researcher(s) among an interdisciplinary team of scientists and virologists during the COVID-19 pandemic. Your team has decided to dedicate their time and resources to identifying candidate anti-viral drugs that may reduce severity of COVID-19 symptoms and the viruses' mortality rate. Unfortunately, your team only has the resources to test a handful of candidate anti-viral drugs among the millions that exist. They turn to you and your team of machine learning engineers and data scientists to generate a deep learning model that can predict which of the millions of drugs is most likely to cure COVID-19 and provide them with a short list of candidate drugs to test in the lab. Time is ticking! Lives are at stake! Can you help bring an end to the pandemic?!

Into the Notebooks we Go...

We will cover two notebooks today!

1. DeepPurpose Tutorial
2. Tutorial 7 - Transfer Learning

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