Brainstorming Links:

* https://cs230.stanford.edu/past-projects/
* https://brown-deep-learning.github.io/dl-website-2020/dlday/
* http://cs230.stanford.edu/projects\_spring\_2019/reports/18680794.pdf
* http://cs230.stanford.edu/projects\_fall\_2020/reports/55825128.pdf
* https://www.fritz.ai/style-transfer/
* http://cs230.stanford.edu/projects\_fall\_2020/reports/55792990.pdf
* **https://genekogan.com/works/style-transfer/**

Consult Boquing in office hours on Tuesday, March 30th, 2020

Appl

* New dataset (e.g. new artist/style)
* Improve method?
  + Different models/computer vision architectures
* New application? (e.g. Instagram filter, animation)

Generative adversarial networks (Dan’s idea):

* Objects that don’t exist

**GITHUB links:**

http://github.com/drew-solomon

<https://github.com/romacoffin/>

[**https://github.com/annieptba/annieptba**](https://github.com/annieptba/annieptba)

**New topic ideas:**

* *Predicting poverty using satellite image data:* <https://github.com/jmather625/predicting-poverty-replication>
  + Simplified and newer version, uses VGG transfer learning
  + We can aim to improve R^2 (i.e. variance in poverty data explained) by trying different different models/techniques
  + Useful for policy-making, sustainable development goals - efficient real-time data
  + Original: <http://sustain.stanford.edu/predicting-poverty>
  + Tensorflow/ Rwanda: <https://github.com/carsonluuu/Poverty-Prediction-by-Satellite-Imagery/blob/master/demo.ipynb>
  + Blogpost of the Rwanda project: <https://towardsdatascience.com/how-to-understand-global-poverty-from-outer-space-442e2a5c3666>
  + Updated 2020 version: https://github.com/asmikumar/poverty-prediction/tree/master/intermediate\_files

**State of the art (2016)**

* **Paper:** <https://science.sciencemag.org/content/353/6301/790.abstract> (
* Github: <https://github.com/nealjean/predicting-poverty/tree/master/scripts>
* Website: <http://sustain.stanford.edu/predicting-poverty>
* Combine mobile data (blog post 3): <https://science.sciencemag.org/content/350/6264/1073>

**Nigeria shape file:**

<https://africaopendata.org/dataset/shape-file-of-nigeria>

<https://map.igismap.com/gis-data/nigeria/administrative_outline_boundary>

Best option:

<https://gadm.org/download_country_v3.html>

**References/ Evaluation**

<https://www.nature.com/articles/s41467-020-16185-w> (2020)

* Tensorflow/ Rwanda (WE ARE USING HIS STUFF):: <https://github.com/carsonluuu/Poverty-Prediction-by-Satellite-Imagery/blob/master/demo.ipynb>

Critique of this method:

<https://www.mdpi.com/2413-8851/2/1/8>

**Data (2018)**

<https://drive.google.com/drive/folders/1gZZ1NoKaq43znWIBjzmrLuMQh4uzu9qn>

**Notes**

* Can we replicate TensorFlow code
* Or use PyTorch?
* Can we aim to improve upon our example, or best in the field?
  + Check with profs
* Need to get approved to get DHS data

