Google Landmark Recognition Challenge

강병욱, 김예찬, 소진석, 황중원, 문태봉

May 12nd 2018

어떤 대회?

- 이미지 파일로 랜드마크 레이블 (6051)을 예측!

주어진 데이터는?

- train.csv (id, url, landmark_id) : 1.2M
- test.csv (id, url): 0.1M
- #classes: 14,951

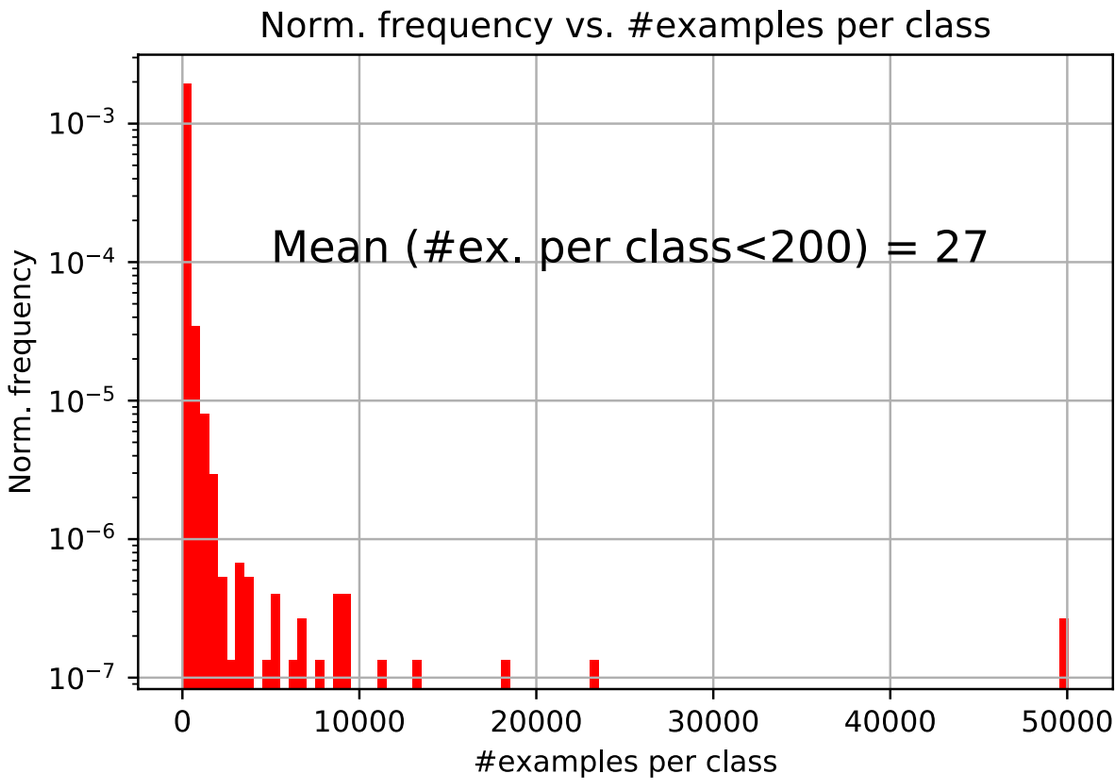
```
"id","url","landmark_id"
"0aac70a1de44ced6","http://lh6.ggpht.com/-cJMh9AYQGk8/SOkF_Q5PrjI/AAAAAAAACa4/YWapKF6Wwuo/s1600/",9779
"3060f5f75d936abb","http://lh3.ggpht.com/-KXyELwqwp_Q/Ry-qmQAqwUI/AAAAAAAAAoU/SUt6osy86xk/s1600/",6051
"86608c54eced1b99","https://lh4.googleusercontent.com/-tMoBJaphC34/R-ghJ_EcGCI/AAAAAAAABiw/Ug4rnSzaW-g/s1600/",9633
"3cbab75ec1e879b8","https://lh6.googleusercontent.com/-fgwgYyYZiVI/S7pIknPBHGI/AAAAAAAABtk/7ZV3HOh3jmA/s0-d/",9633
"ab91c5915f26b679","https://lh6.googleusercontent.com/-Kz7iu1q0zs0/SloIJ2I8AVI/AAAAAAAAEJI/akeGnMSqM0k/s1600/",9633
"b9260b9875a315b1","https://lh6.googleusercontent.com/-Igkby7pShwQ/UJBVX-fe_1I/AAAAAAAAIi8/-I_ToGTrO7M/s1600/",9779
"270140b07481fb7e","http://lh3.ggpht.com/-GtgCG7ZNNDw/TWWRUVMMpUI/AAAAAAAAC00/AUNX8bd957w/s1600/",6051
"493ee4b01a3deb82","http://lh6.ggpht.com/-Xc0B_C_xpfc/RsIor9h8-SI/AAAAAAAABK0/d6gJYx06eKI/s1600/",6051
"2c792f61e192b55d","https://lh3.googleusercontent.com/-r7w0c7chrC8/TKvJKIyP-yI/AAAAAAAAAbE/G1GYmt5t-bg/s1600/",6051
```

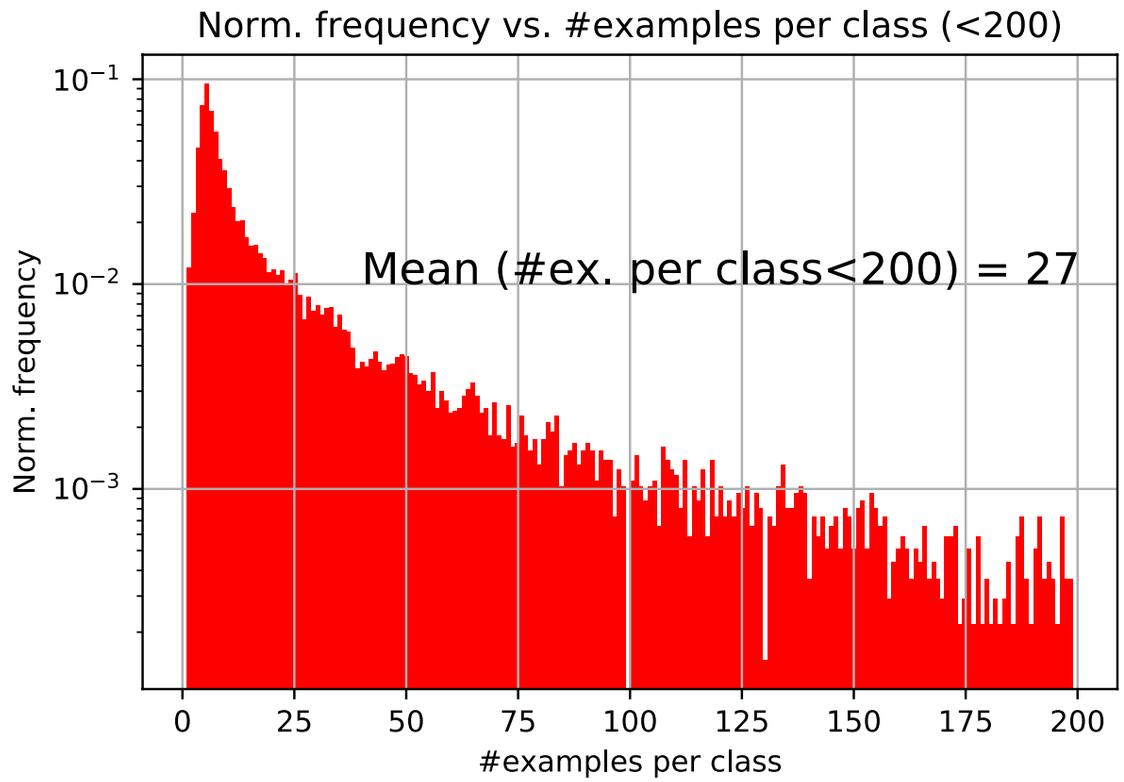
이미지를 불러올 때

- 다운로드 되지 않는 파일이 존재
- 깨진 파일이 존재

#examples / class

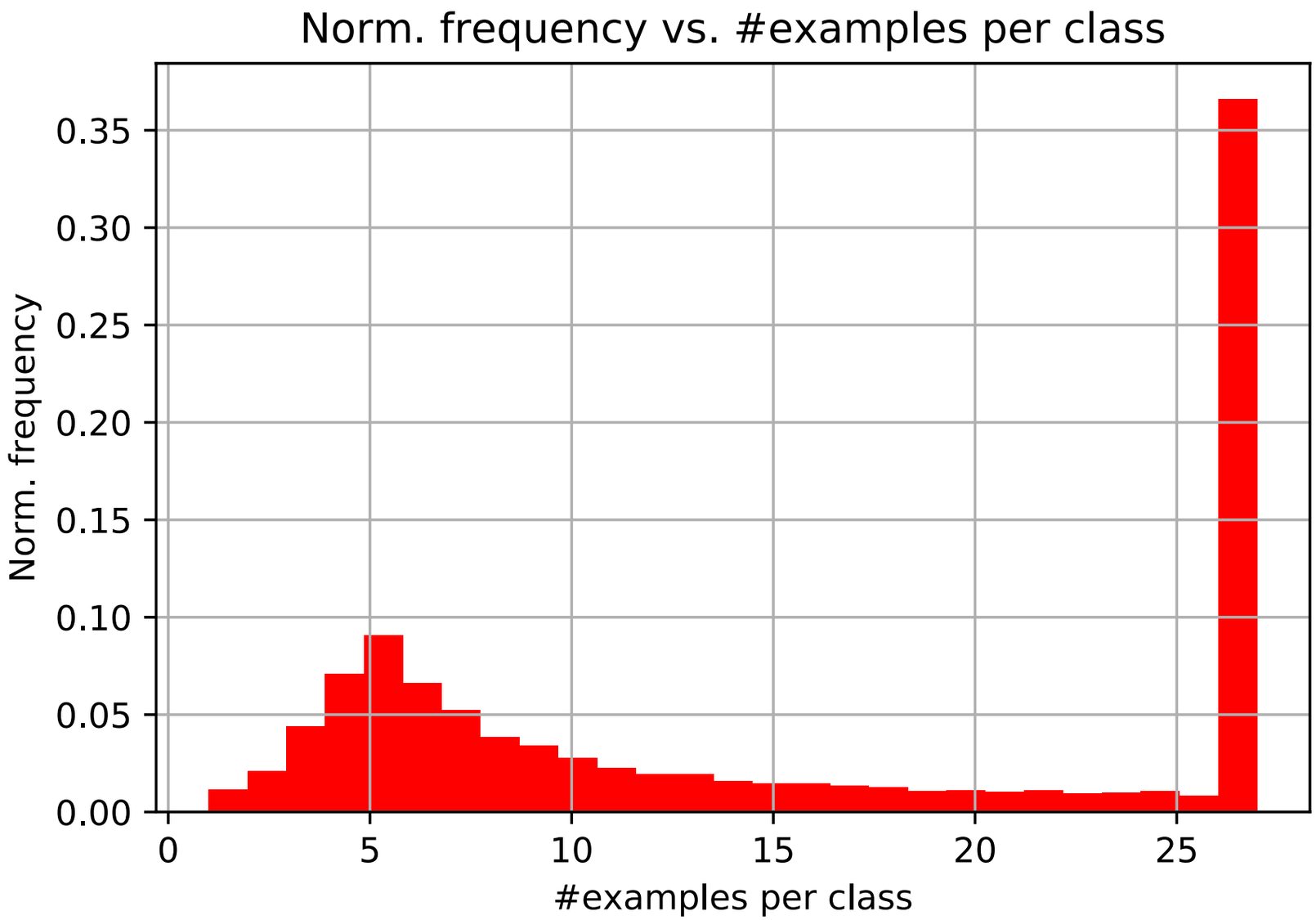
- #classes: 14,951





#examples / class

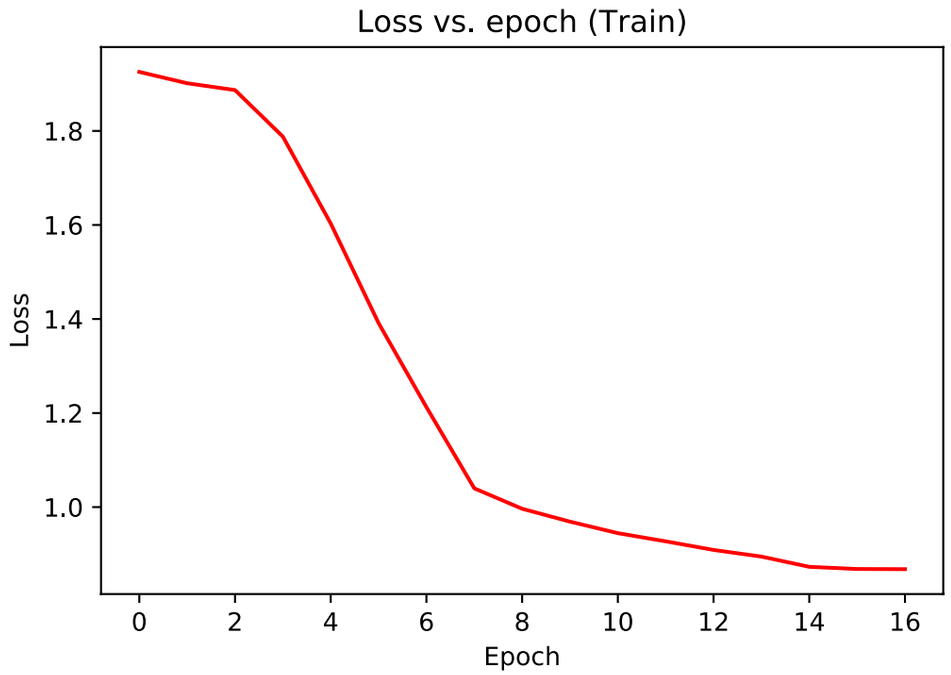
- #classes: 14,951

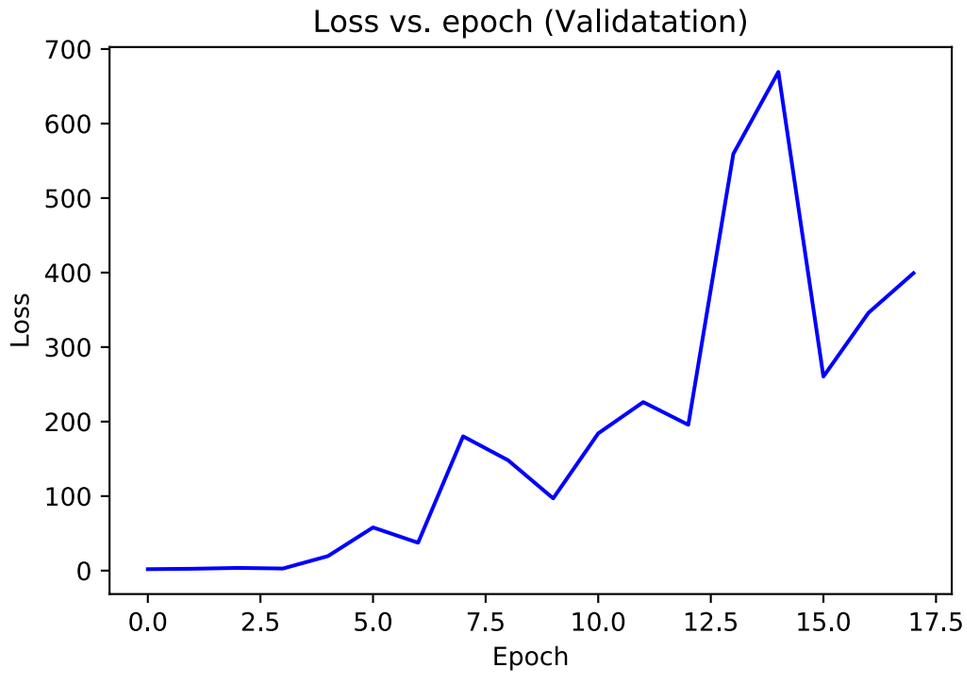


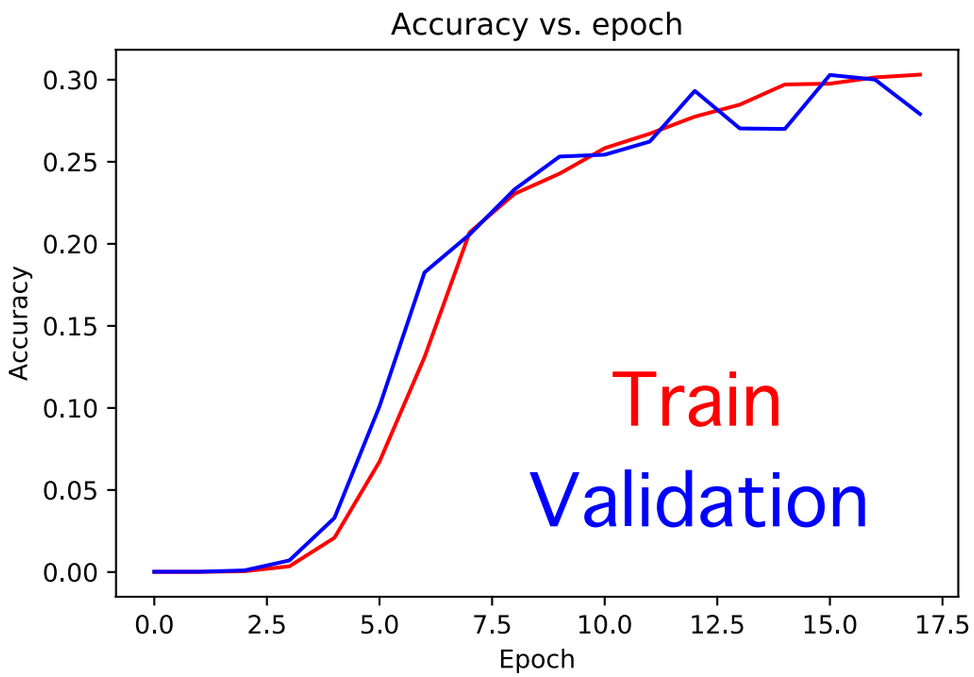
모델은?

- 이미지 파일이 너무 많아서 오래 걸리네요.
- Transfer learning
- 사용한 모델: resnet18

학습 결과







클래스는 많은데 데이터가 너무 적다

-> Overfitting

다음은?

2.8 One Shot Deep Learning

[59] Lake, Brenden M., Ruslan Salakhutdinov, and Joshua B. Tenenbaum. "**Human-level concept learning through probabilistic program induction.**" Science 350.6266 (2015): 1332-1338. [pdf] **(No Deep Learning,but worth reading)**
☆☆☆☆☆

[60] Koch, Gregory, Richard Zemel, and Ruslan Salakhutdinov. "**Siamese Neural Networks for One-shot Image Recognition.**"(2015) [pdf] ☆☆☆

[61] Santoro, Adam, et al. "**One-shot Learning with Memory-Augmented Neural Networks.**" arXiv preprint arXiv:1605.06065 (2016). [pdf] **(A basic step to one shot learning)** ☆☆☆☆

[62] Vinyals, Oriol, et al. "**Matching Networks for One Shot Learning.**" arXiv preprint arXiv:1606.04080 (2016). [pdf]
☆☆☆

[63] Hariharan, Bharath, and Ross Girshick. "**Low-shot visual object recognition.**" arXiv preprint arXiv:1606.02819 (2016).
[pdf] **(A step to large data)** ☆☆☆☆

https://github.com/floodsung/Deep-Learning-Papers-Reading-Roadmap

Thanks!