

Landmark Retrieval Challenge Intro

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<https://www.kaggle.com/c/landmark-recognition-2021>



Overview - 4th Landmark Retrieval Challenge

- New format: Code competition
- Focus on fairness
- Run time: 7 weeks (ended Oct. 1st)
- Prizes: Kaggle merchandise
- Participating teams: 263
 - 17 of the top-20 teams also participated in Recognition

Task

Problem statement: *given a landmark image, retrieve similar images*



Example test images

Example index images

Metric: mean Average Precision (mAP) with top-100 retrieved images

2021 Challenge Format

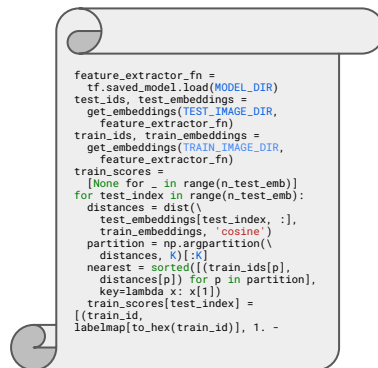
2020



SavedModel



2021



Code

Challenge Format: Coding Competition

- Participants implement retrieval algorithm in Kaggle Notebook
 - Allows for diverse / advanced approaches
 - Can import any pre-trained models or libraries
 - Can use training data of choice (GLD v2 clean is provided)
 - Ample resources for diverse approaches
 - Retrieval / Classification
 - Local / global features

2021 Retrieval Challenge Data

Development Data

Training Set

GLDv2-train-clean
(1.5M images of 81k landmarks)
no need to re-download

Index Set

76k images from GLDv2-index

Test Set

1.1k *landmark* queries from
GLDv2-test

Evaluation Data

Index Set

- 100k images from Wikimedia
- no *image* overlap with GLDv2
- partial *class* overlap with GLDv2-train

Test Set

- 1,542 images from Wikimedia
 - 514 for public
 - 1028 for private

Landmark Retrieval Track

Final results: private dataset, total of 263 teams

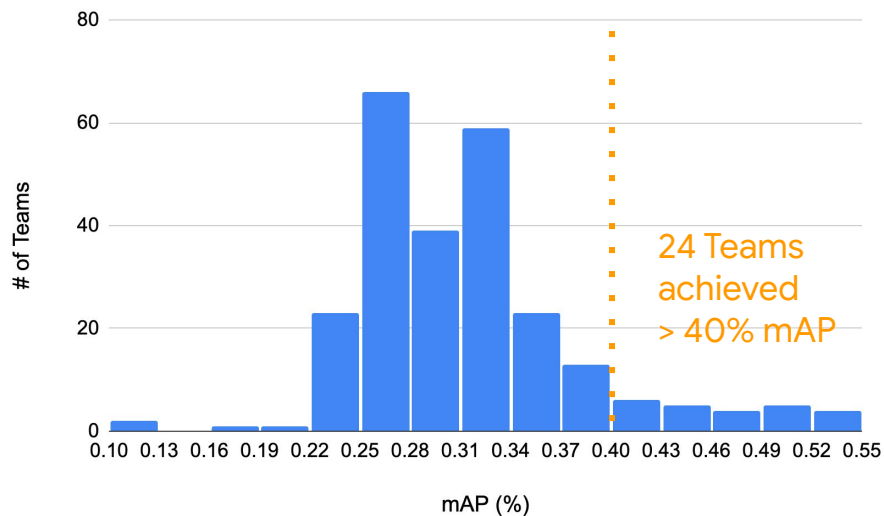
Rank	Team	mAP (%)
1	Dieter	53.75
2	ZhangWesley	53.00
3	All Data Are Ext	52.90
4	bestfitting	52.61
5	underfitting	50.83

Rank	Team	mAP (%)
6	Rist Kaggle team	50.75
7	NotEnoughFitting	50.03
8	gpushare.com	49.57
9	Eduardo e Matheus	49.43
10	goodenoughfitting	48.78

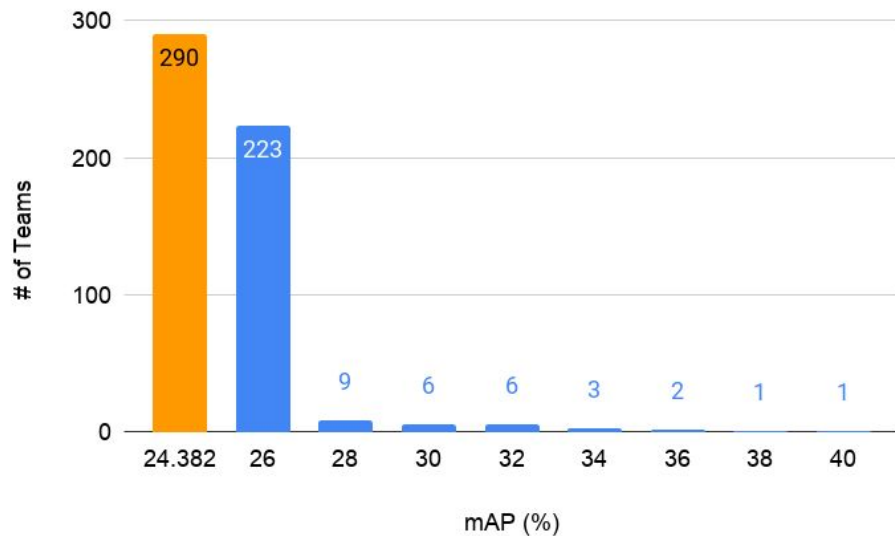
Full results can be found on the [Kaggle Leaderboard of the 2021 Landmark Retrieval Challenge](#)

Landmark Retrieval Track

mAP (%) histogram for participants



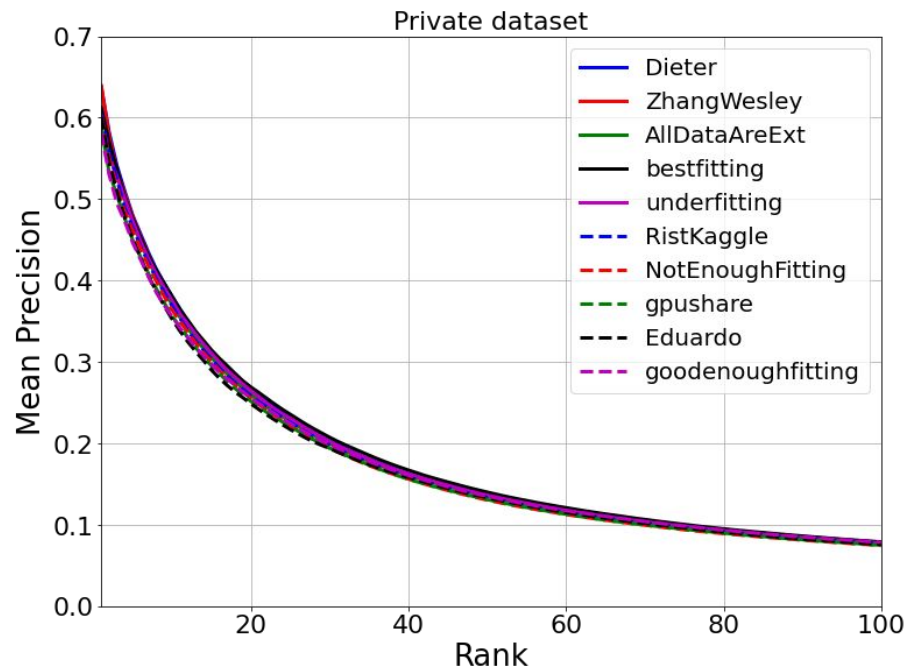
2021



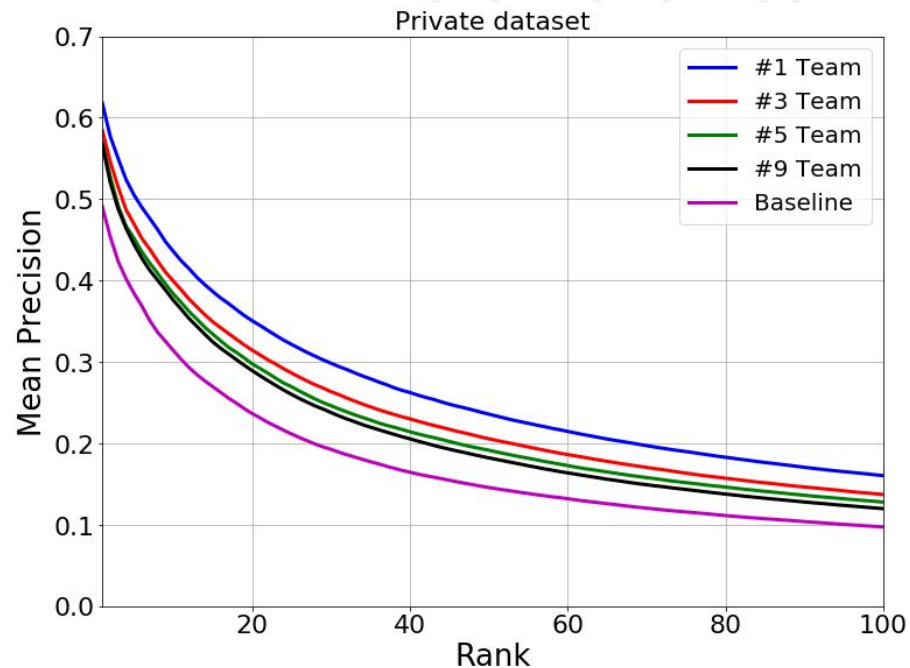
2020

Landmark Retrieval Track

2021 the mAP of #1 of 10% higher than #10



2020 the mAP of #1 was 25% higher than #10



Landmark Retrieval Track

Rank	Team	mAP (%)	MeanPos	P@10 (%)
1	Dieter	53.75	17.69	36.51
2	ZhangWesley	53.00	17.84	35.86
3	All Data Are Ext	52.90	19.02	35.48
4	bestfitting	52.61	19.74	36.43
5	underfitting	50.83	19.50	35.92

Rank	Team	mAP (%)	Mean Pos	P@10 (%)
6	Rist Kaggle team	50.75	19.36	35.35
7	NotEnoughFitting	50.03	20.48	35.01
8	gpushare.com	49.57	22.43	34.31
9	Eduardo e Matheus	49.43	21.40	33.78
10	goodenoughfitting	48.78	22.55	34.19

MeanPos: mean position of first relevant image (if no relevant image in top-100, use 101 as position)

P@10: mean precision at rank 10

Summary - Landmark Retrieval Challenge 2021

- Strong participation despite lack of prize money
- New challenge format: Code competition
- Focus on fairness