

Using the Transformer

Add-On: Which model to use?















Learning goals





- Huggingface model hub
- Grasp the difficulty of model choice

THE HUGGINGFACE HUB

Tasks

-  Image Classification
-  Image Segmentation
-  Automatic Speech Recognition
-  Sentence Similarity
-  Question Answering
-  Zero-Shot Classification
-  Translation
-  Fill-Mask
-  Token Classification
-  Audio Classification
-  Summarization
-  + 23 Tasks










Libraries

-  PyTorch
-  TensorFlow
-  JAX
-  + 36





Datasets

-  mozilla-foundation/common_voice_7_0
-  squad
-  wikipedia
-  common_voice
-  glue
-  emotion
-  xtreme
-  imdb
-  + 328

Languages

-  English
-  French
-  Spanish
-  German
-  Chinese
-  Portuguese
-  Japanese
-  Russian
-  + 198

Licenses

-  apache-2.0
-  mit
-  afll-3.0
-  + 56

Other



-  AutoTrain Compatible
-  Eval Results
-  Has a Space
-  Carbon Emissions

Models


100,642

11 Sort: Most Downloads




bert-base-uncased

 Updated 28 days ago •  21.4M •  373




xln-roberta-base

 Updated 28 days ago •  13M •  123


distilbert-base-uncased-finetuned-sst-2-english

 Updated 9 days ago •  10.1M •  121




distilbert-base-uncased

 Updated 28 days ago •  8.22M •  105




bert-base-multilingual-cased

 Updated 27 days ago •  6.95M •  76


Jean-Baptiste/camembert-ner

 Updated Oct 13 •  5.84M •  48




sentence-transformers/paraphrase-multilingual-Mi...

 Updated Jun 15 •  3.7M •  75



roberta-large

 Updated Sep 29 •  2.57M •  69




bert-base-chinese

 Updated 27 days ago •  2.35M •  175




cardiffnlp/twitter-roberta-base-sentiment

 Updated Apr 6 •  2.17M •  106




prajjwalibert/tiny

 Updated Oct 27, 2021 •  15.8M •  19




gpt2

 Updated 21 days ago •  10.9M •  360




openai/clip-vit-large-patch14

 Updated Oct 4 •  9.71M •  107




roberta-base

 Updated Sep 29 •  6.99M •  92



bert-base-cased

 Updated 28 days ago •  6.91M •  63

google/vit-base-patch32-224-in21k

 Updated 6 days ago •  3.9M •  4




sentence-transformers/all-MiniLM-L6-v2

 Updated Nov 7 •  2.77M •  145




albert-base-v2

 Updated Aug 30, 2021 •  2.4M •  29

microsoft/beit-base-patch16-224-pt22k-ft22k


 Updated Jan 28 •  2.37M •  16


ProsusAI/finbert


 Updated Oct 2 •  2.14M •  121















A SINGLE MODEL

Example: <https://huggingface.co/bert-base-uncased>

 **Hugging Face**

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bert-base-uncased  Like 373

 Fill-Mask  PyTorch  TensorFlow  JAX  Rust  Safetensors  Transformers  bookcorpus  wikipedia  English  arxiv:1810.04805  bert  exbert  AutoTrain Compatible

License: apache-2.0

[Model card](#) [Files and versions](#) [Community 11](#)

[Edit model card](#)

BERT base model (uncased)

Pretrained model on English language using a masked language modeling (MLM) objective. It was introduced in [this paper](#) and first released in [this repository](#). This model is uncased: it does not make a difference between english and English.


Disclaimer: The team releasing BERT did not write a model card for this model so this model card has been written by the Hugging Face team.

Model description


BERT is a transformers model pretrained on a large corpus of English data in a self-supervised fashion. This means it was pretrained on the raw texts only, with no humans labeling them in any way (which is why it can use lots of publicly available data) with an automatic process to generate inputs and labels from those texts. More precisely, it was pretrained with two objectives:

- Masked language modeling (MLM): taking a sentence, the model randomly masks 15% of the words in the input then run the entire masked sentence through the model and has to predict the masked words. This is different from traditional recurrent neural networks (RNNs) that usually see the words one after the other, or from autoregressive models like GPT which internally masks the future tokens. It allows the model to learn a bidirectional representation of the sentence.

Downloads last month
21,362,332



Hosted inference API

 Fill-Mask Examples ▾

Mask token: [MASK]


Paris is the [MASK] of France.


[Compute](#)

The model is loaded and running on Intel Xeon 3rd Gen Scalable CPU

[JSON Output](#) [Maximize](#)

Datasets used to train bert-base-uncased

 **wikipedia**
Updated Nov 3 • 23.6k • 72

 **bookcorpus**
[Preview](#) • Updated Nov 3 • 8.69k • 29

MODEL RECYCLING

A variety of models:

- Everyone can push his/her fine-tuned model to the hub
- Result: A multitude of different models available for each architecture

→ *Burning Question*: Which one should I use??

- The "original" pre-trained version
- A fine-tuned model on a similar task
- An ensemble?
- An averaged model?
- Something else?

MODEL RECYCLING



🔍 Search Model Recycling

[Model Recycling on GitHub](#)

Home

Rankings



FAQ

Citation

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Welcome to model-recycling page

Hardly anyone trains from scratch anymore, we all finetune over a pretrained model.

Research slowly reaches consensus that some finetuned models are better base models than the pretrained models themselves.

This site presents a dynamic view of the best models to choose for a given model size and architecture. We follow the findings and methodology from our **paper**: We download finetuned models found in HuggingFace per architecture and efficiently rank them over a representative task. We then evaluate the top ranked models by finetuning over a large set of 36 target tasks, and report the average performance of each base model.

Tested so far: 1986 (and counting)

Project website: <https://ibm.github.io/model-recycling/>

Paper: <https://arxiv.org/pdf/2211.00107.pdf>

MODEL RECYCLING

Best models per architectures

Pretrained	Best model	Avg.	Pretrained Avg.	Ranking
roberta-base	ibm/CoLD-Fusion-itr13-seed2	78.72	76.22	link
bert-base-uncased	ffgcc/InfoCSE-bert-base	74.28	72.20	link
bert-base-cased	Dylan1999/bert-finetuned-squad-accelerate	74.07	72.43	link
t5-base	adit94/nlpcharade	78.23	75.45	link
google/t5-v1_1-base	anshoomehra/t5-v1-base-s2-auto-qgen	74.27	68.82	link