Bert

in submitting a resource to be included here, please feel free to open a Pull Request and we'll review it! The resource should ideally demonstrate something new instead of duplicating an existing resource.

Text Classification

- A blog post on <u>BERT Text Classification in a different language</u>.
- A notebook for <u>Finetuning BERT (and friends) for multi-label text</u> classification.
- A notebook on how to <u>Finetune BERT for multi-label classification using</u>
 <u>PyTorch.</u>
- A notebook on how to <u>warm-start an EncoderDecoder model with BERT for</u> summarization.
- <u>BertForSequenceClassification</u> is supported by this <u>example script</u> and <u>notebook</u>.
- <u>TFBertForSequenceClassification</u> is supported by this <u>example script</u> and notebook.
- <u>FlaxBertForSequenceClassification</u> is supported by this <u>example script</u> and notebook.
- Text classification task guide

Token Classification

- A blog post on how to use <u>Hugging Face Transformers with Keras:</u> <u>Fine-tune a non-English BERT for Named Entity Recognition</u>.
- A notebook for <u>Finetuning BERT for named-entity recognition</u> using only the first wordpiece of each word in the word label during tokenization. To propagate the label of the word to all wordpieces, see this <u>version</u> of the notebook instead.
- <u>BertForTokenClassification</u> is supported by this <u>example script</u> and <u>notebook</u>.
- <u>TFBertForTokenClassification</u> is supported by this <u>example script</u> and notebook.
- FlaxBertForTokenClassification is supported by this example script.
- <u>Token classification</u> chapter of the Hugging Face Course.

• Token classification task guide

Fill-Mask

- <u>BertForMaskedLM</u> is supported by this <u>example script</u> and <u>notebook</u>.
- <u>TFBertForMaskedLM</u> is supported by this <u>example script</u> and <u>notebook</u>.
- FlaxBertForMaskedLM is supported by this example script and notebook.
- Masked language modeling chapter of the Hugging Face Course.
- Masked language modeling task guide

Question Answering

- <u>BertForQuestionAnswering</u> is supported by this <u>example script</u> and notebook.
- <u>TFBertForQuestionAnswering</u> is supported by this <u>example script</u> and notebook.
- FlaxBertForQuestionAnswering is supported by this example script.
- Question answering chapter of the Hugging Face Course.
- Question answering task guide

Multiple choice

- BertForMultipleChoice is supported by this example script and notebook.
- <u>TFBertForMultipleChoice</u> is supported by this <u>example script</u> and <u>notebook</u>.
- Multiple choice task guide

← Inference

- A blog post on how to <u>Accelerate BERT inference with Hugging Face</u> <u>Transformers and AWS Inferentia</u>.
- A blog post on how to <u>Accelerate BERT inference with</u> DeepSpeed-Inference on GPUs.

Pretraining

• A blog post on <u>Pre-Training BERT with Hugging Face Transformers and</u> Habana Gaudi.

Deploy

- A blog post on how to <u>Convert Transformers to ONNX with Hugging Face</u>
 <u>Optimum.</u>
- A blog post on how to <u>Setup Deep Learning environment for Hugging Face</u> <u>Transformers with Habana Gaudi on AWS.</u>
- A blog post on <u>Autoscaling BERT with Hugging Face Transformers</u>, <u>Amazon SageMaker and Terraform module</u>.
- A blog post on <u>Serverless BERT with HuggingFace</u>, <u>AWS Lambda</u>, and <u>Docker</u>.
- A blog post on <u>Hugging Face Transformers BERT fine-tuning using Amazon SageMaker and Training Compiler.</u>
- A blog post on <u>Task-specific knowledge distillation for BERT using</u> <u>Transformers & Amazon SageMaker.</u>

Gpt

Text Classification

- A blog post on <u>outperforming OpenAI GPT-3 with SetFit for</u> text-classification.
- See also: Text classification task guide

Text Generation

• A blog on how to <u>Finetune a non-English GPT-2 Model with Hugging Face</u>.

- A blog on <u>How to generate text: using different decoding methods for</u> language generation with Transformers with GPT-2.
- A blog on <u>Training CodeParrot</u> <u>from Scratch</u>, a large GPT-2 model.
- A blog on Faster Text Generation with TensorFlow and XLA with GPT-2.
- A blog on <u>How to train a Language Model with Megatron-LM</u> with a GPT-2 model.
- A notebook on how to <u>finetune GPT2 to generate lyrics in the style of your</u> favorite artist.
- A notebook on how to <u>finetune GPT2 to generate tweets in the style of your</u> favorite Twitter user.
- <u>Causal language modeling</u> chapter of the Hugging Face Course.
- <u>OpenAIGPTLMHeadModel</u> is supported by this <u>causal language modeling</u> example script, text generation example script and notebook.
- <u>TFOpenAIGPTLMHeadModel</u> is supported by this <u>causal language</u> <u>modeling example script</u> and <u>notebook</u>.
- See also: <u>Causal language modeling task guide</u>

Token Classification

A course material on <u>Byte-Pair Encoding tokenization</u>.

LLama-2

A list of official Hugging Face and community (indicated by) resources to help you get started with LLaMA2. If you're interested in submitting a resource to be included here, please feel free to open a Pull Request and we'll review it! The resource should ideally demonstrate something new instead of duplicating an existing resource.

- <u>Llama 2 is here get it on Hugging Face</u>, a blog post about Llama 2 and how to use it with Transformers and PEFT.
- <u>LLaMA 2 Every Resource you need</u>, a compilation of relevant resources to learn about LLaMA 2 and how to get started quickly.

Text Generation

- A <u>notebook</u> on how to fine-tune Llama 2 in Google Colab using QLoRA and 4-bit precision.
- A <u>notebook</u> on how to fine-tune the "Llama-v2-7b-guanaco" model with 4-bit QLoRA and generate Q&A datasets from PDFs.

Text Classification

• A <u>notebook</u> on how to fine-tune the Llama 2 model with QLoRa, TRL, and Korean text classification dataset.

Optimization

- <u>Fine-tune Llama 2 with DPO</u>, a guide to using the TRL library's DPO method to fine tune Llama 2 on a specific dataset.
- Extended Guide: Instruction-tune Llama 2, a guide to training Llama 2 to generate instructions from inputs, transforming the model from instruction-following to instruction-giving.
- A <u>notebook</u> on how to fine-tune the Llama 2 model on a personal computer using QLoRa and TRL.

✓ Inference

- A <u>notebook</u> on how to quantize the Llama 2 model using GPTQ from the AutoGPTQ library.
- A <u>notebook</u> on how to run the Llama 2 Chat Model with 4-bit quantization on a local computer or Google Colab.



- <u>Fine-tune LLaMA 2 (7-70B) on Amazon SageMaker</u>, a complete guide from setup to QLoRA fine-tuning and deployment on Amazon SageMaker.
- <u>Deploy Llama 2 7B/13B/70B on Amazon SageMaker</u>, a guide on using Hugging Face's LLM DLC container for secure and scalable deployment.

Gpt-2

- A blog on how to Finetune a non-English GPT-2 Model with Hugging Face.
- A blog on <u>How to generate text: using different decoding methods for language generation with Transformers</u> with GPT-2.
- A blog on <u>Training CodeParrot</u> **1** from <u>Scratch</u>, a large GPT-2 model.
- A blog on <u>Faster Text Generation with TensorFlow and XLA</u> with GPT-2.
- A blog on <u>How to train a Language Model with Megatron-LM</u> with a GPT-2 model.
- A notebook on how to <u>finetune GPT2 to generate lyrics in the style of your favorite artist.</u>
- A notebook on how to <u>finetune GPT2 to generate tweets in the style of your</u> favorite Twitter user.
- Causal language modeling chapter of the Augging Face Course.
- <u>GPT2LMHeadModel</u> is supported by this <u>causal language modeling</u> <u>example script</u>, <u>text generation example script</u>, and <u>notebook</u>.
- <u>TFGPT2LMHeadModel</u> is supported by this <u>causal language modeling</u> <u>example script</u> and <u>notebook</u>.
- <u>FlaxGPT2LMHeadModel</u> is supported by this <u>causal language modeling</u> example script and <u>notebook</u>.
- Text classification task guide
- Token classification task guide
- Causal language modeling task guide

Roberta

Text Classification

 A blog on <u>Getting Started with Sentiment Analysis on Twitter</u> using RoBERTa and the Inference API.

- A blog on <u>Opinion Classification with Kili and Hugging Face AutoTrain</u> using RoBERTa.
- A notebook on how to <u>finetune RoBERTa for sentiment analysis</u>.
- RobertaForSequenceClassification is supported by this example script and notebook.
- <u>TFRobertaForSequenceClassification</u> is supported by this <u>example script</u> and <u>notebook</u>.
- <u>FlaxRobertaForSequenceClassification</u> is supported by this <u>example script</u> and notebook.
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Token Classification

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- FlaxRobertaForTokenClassification is supported by this example script.
- <u>Token classification</u> chapter of the Hugging Face Course.
- Token classification task quide

Fill-Mask

- A blog on <u>How to train a new language model from scratch using</u> <u>Transformers and Tokenizers</u> with RoBERTa.
- RobertaForMaskedLM is supported by this example script and notebook.
- <u>TFRobertaForMaskedLM</u> is supported by this <u>example script</u> and <u>notebook</u>.
- <u>FlaxRobertaForMaskedLM</u> is supported by this <u>example script</u> and notebook.
- Masked language modeling chapter of the Hugging Face Course.
- Masked language modeling task guide

Question Answering

- A blog on <u>Accelerated Inference with Optimum and Transformers Pipelines</u> with RoBERTa for question answering.
- RobertaForQuestionAnswering is supported by this <u>example script</u> and <u>notebook</u>.
- <u>TFRobertaForQuestionAnswering</u> is supported by this <u>example script</u> and <u>notebook</u>.
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Multiple choice

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- Multiple choice task guide