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[`mine_hard_negatives()`](../../docs/package_reference/util.html#sentence_transformers.util.mine_hard_negatives)

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[`normalize_embeddings()`](../../docs/package_reference/util.html#sentence_transformers.util.normalize_embeddings)

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[`paraphrase_mining()`](../../docs/package_reference/util.html#sentence_transformers.util.paraphrase_mining)

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[`semantic_search()](../../docs/package_reference/util.html#sentence_transformers.util.semantic_search)

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[`truncate_embeddings()](../../docs/package_reference/util.html#sentence_transformers.util.truncate_embeddings)

*

[Model

Optimization](../../docs/package_reference/util.html#module-sentence_transformers.backend)

*

[`export_dynamic_quantized_onnx_model()](../../docs/package_reference/util.html#sentence_transformers.backend.export_dynamic_quantized_onnx_model)

*

[`export_optimized_onnx_model()](../../docs/package_reference/util.html#sentence_transformers.backend.export_optimized_onnx_model)

*

[`export_static_quantized_openvino_model()](../../docs/package_reference/util.html#sentence_transformers.backend.export_static_quantized_openvino_model)

* [Similarity Metrics](../../docs/package_reference/util.html#module-sentence_transformers.util)

* [`cos_sim()](../../docs/package_reference/util.html#sentence_transformers.util.cos_sim)

* [`dot_score()](../../docs/package_reference/util.html#sentence_transformers.util.dot_score)

*

[`euclidean_sim()](../../docs/package_reference/util.html#sentence_transformers.util.euclidean_sim)

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[`manhattan_sim()](../../docs/package_reference/util.html#sentence_transformers.util.manhattan_sim)

*

[pairwise_cos_sim()](../../docs/package_reference/util.html#sentence_transformers.util.pairwise_cos_sim)

*

[pairwise_dot_score()](../../docs/package_reference/util.html#sentence_transformers.util.pairwise_dot_score)

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* [Usage](../../docs/sentence_transformer/usage/usage.html)

* Image Search

* [Edit on

GitHub](https://github.com/UKPLab/sentence-transformers/blob/master/examples/applications/image-search/README.md)

* * *

Image Search

SentenceTransformers provides models that allow to embed images and text into

the same vector space. This allows to find similar images as well as to implement `**image search**`.

![[ImageSearch]](<https://raw.githubusercontent.com/UKPLab/sentence-transformers/master/docs/img/ImageSearch.png>)

Installation

Ensure that you have `[transformers]`(<https://pypi.org/project/transformers/>) installed to use the image-text-models and use a recent PyTorch version (tested with PyTorch 1.7.0). Image-Text-Models have been added with SentenceTransformers version 1.0.0. Image-Text-Models are still in an experimental phase.

Usage

SentenceTransformers provides a wrapper for the `[OpenAI CLIP Model]`(<https://github.com/openai/CLIP>), which was trained on a variety of (image, text)-pairs.

```
from sentence_transformers import SentenceTransformer

from PIL import Image

# Load CLIP model

model = SentenceTransformer("clip-ViT-B-32")
```

```
# Encode an image:
```

```
img_emb = model.encode(Image.open("two_dogs_in_snow.jpg"))
```

```
# Encode text descriptions
```

```
text_emb = model.encode(
```

```
    ["Two dogs in the snow", "A cat on a table", "A picture of London at night"]
```

```
)
```

```
# Compute similarities
```

```
similarity_scores = model.similarity(img_emb, text_emb)
```

```
print(similarity_scores)
```

You can use the CLIP model for:

- * Text-to-Image / Image-To-Text / Image-to-Image / Text-to-Text Search

- * You can fine-tune it on your own image&text data with the regular SentenceTransformers training code.

Examples

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[Image_Search.ipynb](https://github.com/UKPLab/sentence-transformers/tree/master/examples/applications/image-search/Image_Search.ipynb)

([Colab

Version](https://colab.research.google.com/drive/16OdADinjAg3w3ceZy3-cOR9A-5ZW9BYr?usp=sh

aring)) depicts a larger example for **text-to-image** and **image-to-image** search using 25,000 free pictures from [Unsplash](https://unsplash.com/).

*

[Image_Search-multilingual.ipynb](https://github.com/UKPLab/sentence-transformers/tree/master/examples/applications/image-search/Image_Search-multilingual.ipynb) ([Colab Version](https://colab.research.google.com/drive/1N6woBKL4dzYsHboDNqtv-8gjZglKOZcn?usp=sharing)) example of multilingual text2image search for 50+ languages.

*

[Image_Clustering.ipynb](https://github.com/UKPLab/sentence-transformers/tree/master/examples/applications/image-search/Image_Clustering.ipynb) ([Colab Version](https://colab.research.google.com/drive/1T3gfEF7pkXgPPajNa9ZjurB25B0RJ3_X?usp=sharing)) shows how to perform **image clustering**. Given 25,000 free pictures from [Unsplash](https://unsplash.com/), we find clusters of similar images. You can control how sensitive the clustering should be.

*

[Image_Duplicates.ipynb](https://github.com/UKPLab/sentence-transformers/tree/master/examples/applications/image-search/Image_Duplicates.ipynb) ([Colab Version](https://colab.research.google.com/drive/1wLiZNedMwIM-FxBVbp3aA353yohV_wJ1?usp=sharing)) shows an example how to find duplicate and near duplicate images in a large collection of photos.

*

[Image_Classification.ipynb](https://github.com/UKPLab/sentence-transformers/tree/master/examples/applications/image-search/Image_Classification.ipynb) ([Colab

Version](https://colab.research.google.com/drive/1J0a29kSZ7qJwu2bGqjo1GYRz77v1oWq0?usp=s
haring)) example for (multi-lingual) zero-shot image classification.

[Previous](../parallel-sentence-mining/README.html "Translated Sentence
Mining") [Next](../embedding-quantization/README.html "Embedding
Quantization")

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