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

*

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

* [Model Optimization](package_reference/util.html#module-sentence_transformers.backend)

*

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

*

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

*

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

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

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

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

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

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

*

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

*

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

*

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

*

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

__[Sentence Transformers](../index.html)

* [](../index.html)

* Installation

* [Edit on

GitHub](https://github.com/UKPLab/sentence-transformers/blob/master/docs/installation.md)

* * *

Installation

We recommend **Python 3.9+** , **[PyTorch 1.11.0+](https://pytorch.org/get-started/locally/)** , and **[transformers v4.11.0+](https://github.com/huggingface/transformers)** . There are 5 extra options to install Sentence Transformers:

* **Default:** This allows for loading, saving, and inference (i.e., getting embeddings) of models.

* **ONNX:** This allows for loading, saving, inference, optimizing, and quantizing of models using the ONNX backend.

* **OpenVINO:** This allows for loading, saving, and inference of models using the OpenVINO backend.

* **Default and Training** : Like **Default** , plus training.

* **Development** : All of the above plus some dependencies for developing Sentence Transformers, see Editable Install.

Note that you can mix and match the various extras, e.g. ``pip install -U`

`"sentence-transformers[train,onnx-gpu]"``.

Install with pip•

Default

```
pip install -U sentence-transformers
```

ONNX

For GPU and CPU:

```
pip install -U "sentence-transformers[onnx-gpu]"
```

For CPU only:

```
pip install -U "sentence-transformers[onnx]"
```

OpenVINO

```
pip install -U "sentence-transformers[openvino]"
```

Default and Training

```
pip install -U "sentence-transformers[train]"
```

To use [Weights and Biases](<https://wandb.ai/>) to track your training logs, you should also install `wandb` **(recommended)** :

```
pip install wandb
```

And to track your Carbon Emissions while training and have this information automatically included in your model cards, also install `codecarbon`

(recommended) :

```
pip install codecarbon
```

Development

```
pip install -U "sentence-transformers[dev]"
```

Install with Conda

Default

```
conda install -c conda-forge sentence-transformers
```

ONNX

For GPU and CPU:

```
pip install -U "sentence-transformers[onnx-gpu]"
```

For CPU only:

```
pip install -U "sentence-transformers[onnx]"
```

OpenVINO

```
pip install -U "sentence-transformers[openvino]"
```

Default and Training

```
conda install -c conda-forge sentence-transformers accelerate datasets
```

To use [Weights and Biases](<https://wandb.ai/>) to track your training logs,
you should also install `wandb` **(recommended)** :

```
pip install wandb
```

And to track your Carbon Emissions while training and have this information automatically included in your model cards, also install `codecarbon`

(recommended) :

```
pip install codecarbon
```

Development

```
conda install -c conda-forge sentence-transformers accelerate datasets pre-commit pytest ruff
```

Install from Source

You can install `sentence-transformers` directly from source to take advantage of the bleeding edge `master` branch rather than the latest stable release:

Default


```
pip install git+https://github.com/UKPLab/sentence-transformers.git
```

ONNX

For GPU and CPU:

```
pip install -U "sentence-transformers[onnx-gpu]" @  
git+https://github.com/UKPLab/sentence-transformers.git"
```

For CPU only:

```
pip install -U "sentence-transformers[onnx]" @  
git+https://github.com/UKPLab/sentence-transformers.git"
```

OpenVINO

```
pip install -U "sentence-transformers[openvino] @  
git+https://github.com/UKPLab/sentence-transformers.git"
```

Default and Training

```
pip install -U "sentence-transformers[train] @  
git+https://github.com/UKPLab/sentence-transformers.git"
```

To use [Weights and Biases](<https://wandb.ai/>) to track your training logs,
you should also install `wandb` ****(recommended)**** :

```
pip install wandb
```

And to track your carbon emissions while training and have this information
automatically included in your model cards, also install `codecarbon`
****(recommended)**** :

```
pip install codecarbon
```

Development

```
pip install -U "sentence-transformers[dev] @  
git+https://github.com/UKPLab/sentence-transformers.git"
```

Editable Install

If you want to make changes to `sentence-transformers`, you will need an editable install. Clone the repository and install it with these commands:

```
git clone https://github.com/UKPLab/sentence-transformers  
cd sentence-transformers  
pip install -e ".[train,dev]"
```

These commands will link the new `sentence-transformers` folder and your Python library paths, such that this folder will be used when importing `sentence-transformers`.

Install PyTorch with CUDA support

To use a GPU/CUDA, you must install PyTorch with CUDA support. Follow [PyTorch - Get Started](https://pytorch.org/get-started/locally/) for installation steps.

[Previous](../index.html "SentenceTransformers Documentation") [Next](quickstart.html "Quickstart")

* * *

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