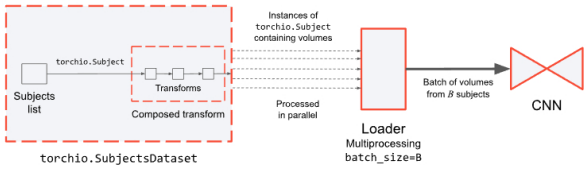
Dataset



SubjectsDataset

```
class torchio.data.SubjectsDataset(subjects: Sequence[torchio.data.subject.Subject],
    transform: Optional[Callable] = None, load_getitem: bool = True)          [source]
```

Bases: `torch.utils.data.dataset.Dataset`

Base TorchIO dataset.

Reader of 3D medical images that directly inherits from the PyTorch `Dataset`. It can be used with a PyTorch `DataLoader` for efficient loading and augmentation. It receives a list of instances of `Subject` and an optional transform applied to the volumes after loading.

PARAMETERS

- **subjects** – List of instances of `Subject`.
- **transform** – An instance of `Transform` that will be applied to each subject.
- **load_getitem** – Load all subject images before returning it in `__getitem__()`. Set it to `False` if some of the images will not be needed during training.

EXAMPLE

```
>>> import torchio as tio
>>> subject_a = tio.Subject(
...     t1=tio.ScalarImage('t1.nrrd',),
...     t2=tio.ScalarImage('t2.mha',),
...     label=tio.LabelMap('t1_seg.nii.gz'),
...     age=31,
...     name='Fernando Perez',
... )
>>> subject_b = tio.Subject(
...     t1=tio.ScalarImage('colin27_t1_tal_lin.minc',),
...     t2=tio.ScalarImage('colin27_t2_tal_lin_dicom',),
...     label=tio.LabelMap('colin27_seg1.nii.gz'),
...     age=56,
...     name='Colin Holmes',
... )
>>> subjects_list = [subject_a, subject_b]
>>> transforms = [
...     tio.RescaleIntensity(out_min_max=(0, 1)),
...     tio.RandomAffine(),
... ]
>>> transform = tio.Compose(transforms)
>>> subjects_dataset = tio.SubjectsDataset(subjects_list, transform=transform)
>>> subject = subjects_dataset[0]
```

Tip

To quickly iterate over the subjects without loading the images, use `dry_iter()`.

```
dry_iter()                                                                    [source]
```

Return the internal list of subjects.

This can be used to iterate over the subjects without loading the data and applying any transforms:

```
>>> names = [subject.name for subject in dataset.dry_iter()]
```

```
classmethod from_batch(batch: Dict) → torchio.data.dataset.SubjectsDataset[source]
```

Instantiate a dataset from a batch generated by a data loader.

PARAMETERS

batch – Dictionary generated by a data loader, containing data that can be converted to instances of `Subject`.

```
set_transform(transform: Optional[Callable]) → None                           [source]
```

Set the `transform` attribute.

PARAMETERS

transform – Callable object, typically an subclass of `torchio.transforms.Transform`.

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