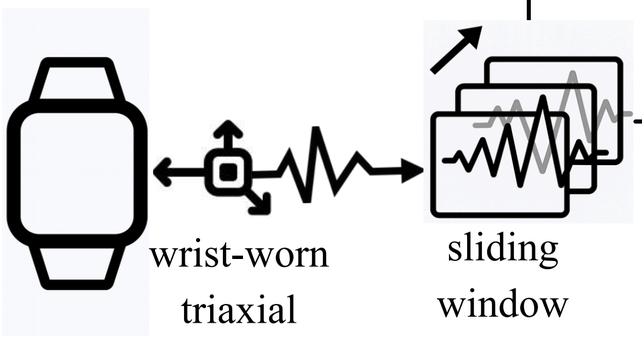
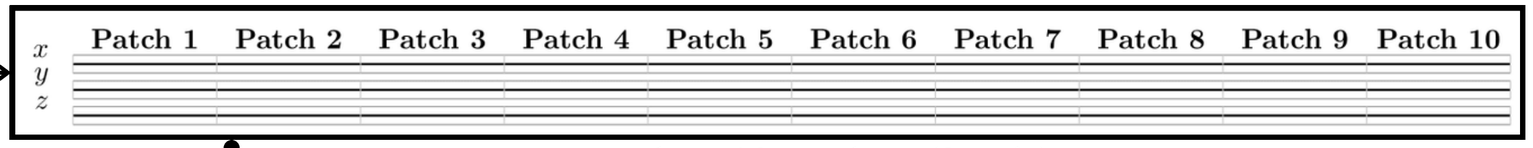
Large free-living dataset



wrist-worn triaxial accelermeter

sliding window



raw patches, 10 patches (3-axis)

proj.

patch tokens

statistical features extractor

proj.

stats

topological features extractor

proj.

topo

patch+ stat + topo

self-supervised pretraining (MPR)

ROPE Transformer Encoder

$\mathscr{L}$MPR MSE Loss

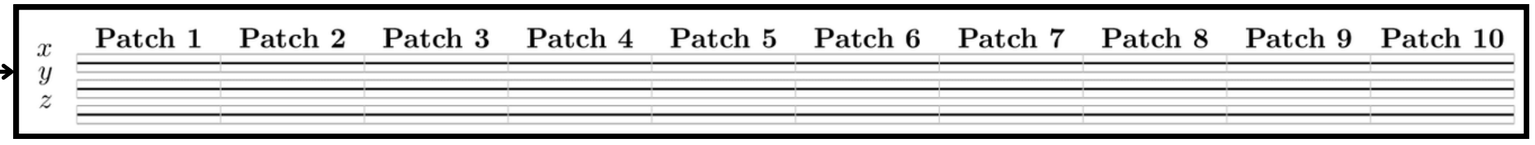
reconstruct masked patch tokens only

1 Self-supervied Pretraining Masked Patch Reconstruction (MPR)

Smaller and labeled dataset(s)
(open or closed source datasets, lab-based or free living)

wrist-worn triaxial accelermeter

sliding window



raw patches, 10 patches (3-axis)

proj.

patch tokens

statistical features extractor

proj.

stats

topological features extractor

proj.

topo

patch+ stat + topo

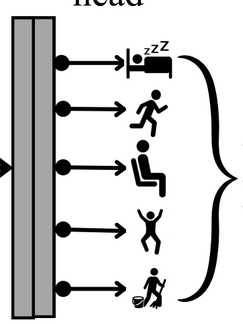
transfer knowledge

ROPE transformer encoder

fine-tuning

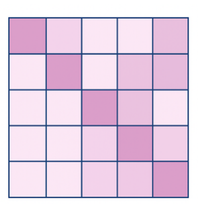
mean pooling

linear classification head



true labels

predicted labels



2 Fine-tuning for Human Activity Recognition (HAR), and other tasks