a) Feature Representation Learning

Inertial Data	Sliding Window Segmentation	Feature Representation	Feature Processing	Classical ML Estimator
$\{\boldsymbol{X_i}, \boldsymbol{y_i}\}_{i=1}^{N}$	$\left[\{\boldsymbol{W_{i,j}}, \boldsymbol{y_{i,j}}\}_{j=1}^{M_i}\right]_{i=1}^{N}$	$\left[\{\boldsymbol{f_{i,j}}, \boldsymbol{y_{i,j}}\}_{j=1}^{M_i}\right]_{i=1}^{N}$	- scaling - selection	- SVC - Random Forest
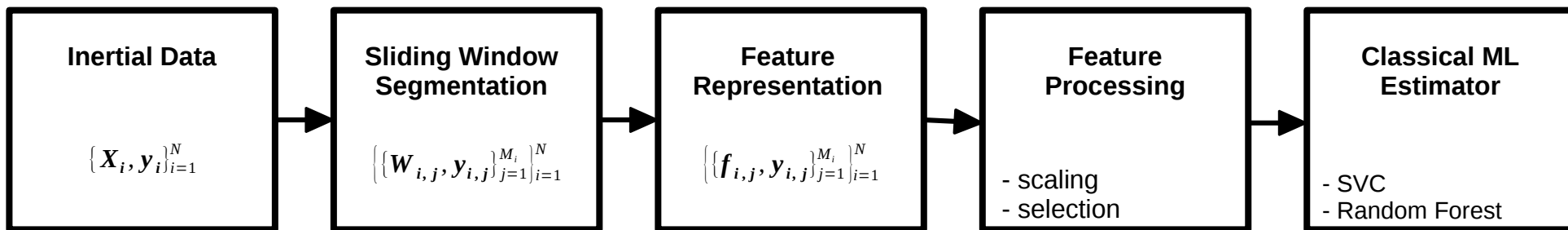
b) Direct Segment Learning

Inertial Data	Sliding Window Segmentation	Neural Network Estimator
$\{(\boldsymbol{X_i}, \boldsymbol{y_i})\}_{i=1}^{N}$	$\left[\{\boldsymbol{W_{i,j}}, \boldsymbol{y_{i,j}}\}_{j=1}^{M_i}\right]_{i=1}^{N}$	- CNN - RNN