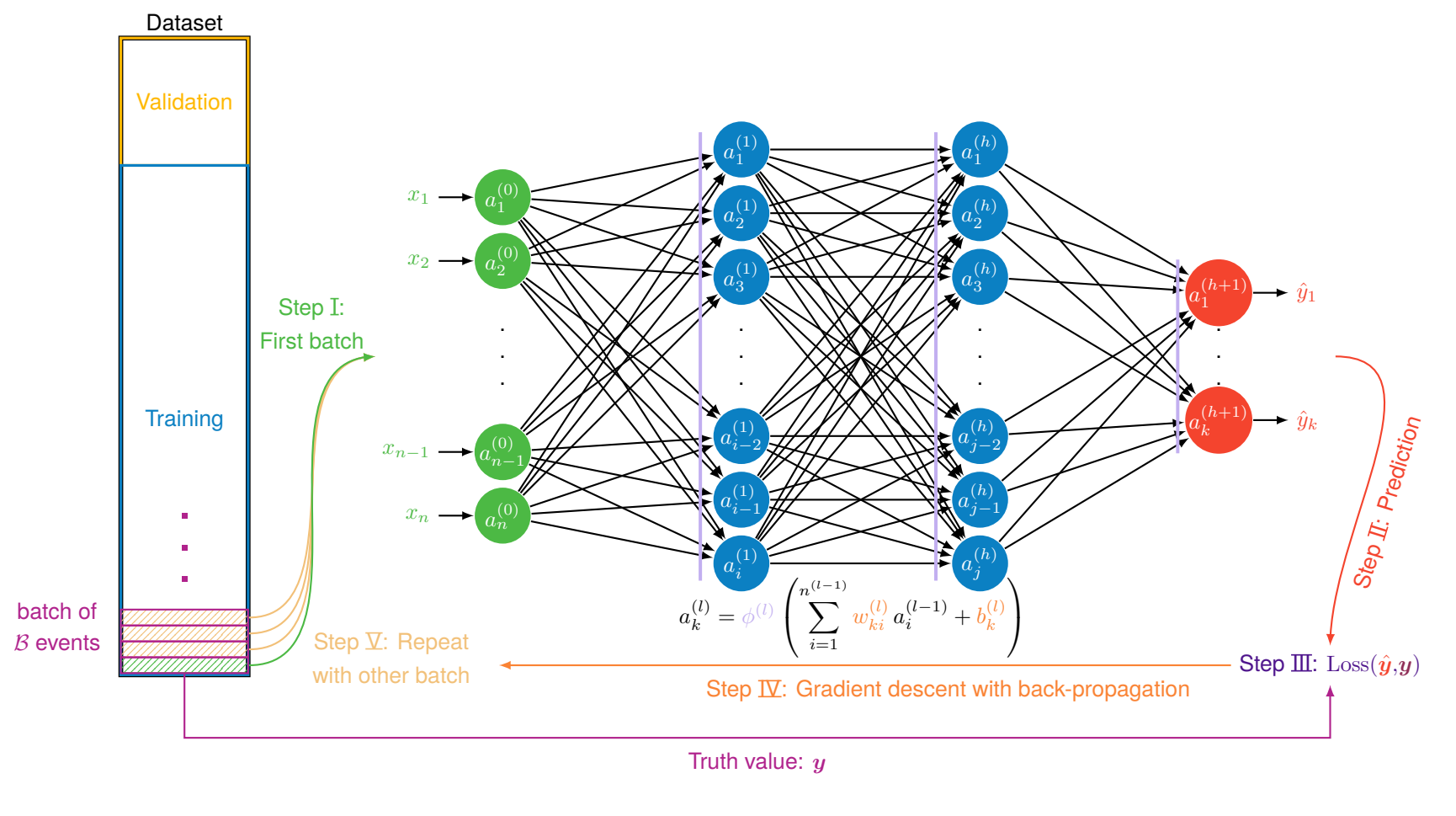

Dataset
Validation
Training
batch of
$\mathcal{B}$ events
Step I:
First batch
Step V: Repeat
with other batch
x_1
x_2
x_{n-1}
x_n
$a_1^{(0)}$
$a_2^{(0)}$
$a_{n-1}^{(0)}$
$a_n^{(0)}$
$a_1^{(1)}$
$a_2^{(1)}$
$a_3^{(1)}$
$a_{i-2}^{(1)}$
$a_{i-1}^{(1)}$
$a_i^{(1)}$
$a_1^{(h)}$
$a_2^{(h)}$
$a_3^{(h)}$
$a_{j-2}^{(h)}$
$a_{j-1}^{(h)}$
$a_j^{(h)}$
$a_1^{(h+1)}$
$a_k^{(h+1)}$
$\hat{y}_1$
$\hat{y}_k$
$a_k^{(l)} = \phi^{(l)} \left(\sum_{i=1}^{n^{(l-1)}} w_{ki}^{(l)} a_i^{(l-1)} + b_k^{(l)} \right)$
Step II: Prediction
Step III: $\mathrm{Loss}(\hat{\boldsymbol{y}},\boldsymbol{y})$
Step IV: Gradient descent with back-propagation
Truth value: $\boldsymbol{y}$