Notation

x	A scalar
$\boldsymbol{x}$	A vector
$\boldsymbol{X}$	A matrix
X	A tensor
$\boldsymbol{X}_{ij}$	Element located at row i column j in matrix $\boldsymbol{X}$
$*$	The convolution operator
$\circ$	The Hadamard product
σ	The sigmoid activation function
$\nabla_{\boldsymbol{x}} f$	Gradient of f with respect to $\boldsymbol{x}$
$f(x;\theta)$	Function f with input x and parameter θ
$\mathcal{U}(a,b)$	The uniform distribution with support $[a,b]$
$\mathbb{R}$	The set of real numbers
$\mathbb{R}_{>0}$	The set of positive real numbers
$\mathbb{N}$	The set of natural numbers