1 Notation

The notation used throughout this thesis is summarized below

- x: A scalar

- $\boldsymbol{x}$: A vector

- $\boldsymbol{X}$: A matrix

- $\boldsymbol{x}_i$: The ith element of a vector $\boldsymbol{x}$

- $\boldsymbol{X}_{ij}$: The jth element in the ith row of matrix $\boldsymbol{X}$

- $\mathbb{R}$: The set of real numbers

- $\mathbb{R}^n$: The set of n-dimensional vectors of real numbers

- $\mathbb{R}^{n \times m}$: The set of $n \times m$-dimensional matrices of real numbers, where n is the amount of rows and m is the amount of columns

- $|\cdot|$: Cardinality or absolute value

- $\nabla_x f$: Gradient of f with respect to x

- $\frac{\partial y}{\partial x}$: Partial derivative of y with respect to x

- $\mathcal{O}$: Big O-notation

- $\odot$: Element-wise multiplication

- $\mathcal{N}\left(\mu, \sigma^2\right)$: Normal/Gaussian distribution with mean μ and standard deviation σ^2

- $D(a, b)$: Arbitrary distance function between a and b