

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 i th element of a vector \boldsymbol{x} |
| \boldsymbol{X}_{ij} : | The j th element in the i th 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 |
| ∇f : | Gradient of f |
| $\frac{\partial y}{\partial x}$: | Partial derivative of y with respect to x |
| \mathcal{O} : | Big O-notation |
| \odot : | Element-wise multiplication |
| $\mathcal{N}(\mu, \sigma^2)$: | Normal/Gaussian distribution with mean μ and standard deviation σ^2 |
| $D(a, b)$: | An arbitrary distance function between a and b |