

Notation Conventions

Machine Learning

Fall 2019

1 Notation

1.1 Scalars

We will use lower-case, unbolded letters to refer to scalar quantities. For example, we would refer to the scalar quantity x using the following notation.

$$x \tag{1}$$

1.2 Vectors

We will use lower-case, bolded letters to refer to vector quantities. For example, we would refer to the vector quantity \mathbf{v} using the following notation.

$$\mathbf{v} \tag{2}$$

1.3 Matrices

We will use upper-case, bolded letters to refer to matrix quantities. For example, we would refer to the matrix quantity \mathbf{A} using the following notation.

$$\mathbf{A} \tag{3}$$

1.4 Independent versus Dependent variables

We will use 'x' to refer to independent (i.e., input) variables and 'y' to refer to dependent (i.e., output) variables. For instance, when describing training data, we will always use 'x' to refer to the input variables and 'y' to refer to the output variable.