Notations

The following is a reference for notations used in the Course.

A, B, C	capital letters represent matrices
u, v, w	lowercase letters represent vectors
A of size $m \times n$ or $(m \times n)$	matrix A has m rows and n columns
A^T	the transpose of matrix A
v^T	the transpose of vector v
A^{-1}	the inverse of matrix A
$\det(A)$	the determinant of matrix A
AB	matrix multiplication of matrices A and B
$u \cdot v; \langle u, v \rangle$	dot product of vectors u and v
$\mathbb{R}$	the set of real numbers, e.g. $0, -0.642, 2, 3.456$
$\mathbb{R}^2$	the set of two-dimensional vectors, e.g. $v = \begin{bmatrix} 1 & 3 \end{bmatrix}^T$
$\mathbb{R}^n$	the set of n-dimensional vectors
$v \in \mathbb{R}^2$	vector v is an element of $\mathbb{R}^2$
$\lvert v \rvert_1$	L1-norm of a vector
$\lvert v \rvert_2; \lvert v \rvert; \lVert v \rVert$	L2-norm of a vector
$T : \mathbb{R}^2 \to \mathbb{R}^3; T(u) = w$	transformation T of a vector $v \in \mathbb{R}^2$ into the vector $w \in \mathbb{R}^3$