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**Determinants In-depth** 

**Eigenvalues and Eigenvectors** 

**Lecture Notes** 

**Programming Assignment: Eigenvalues and Eigenvectors** 

## **Course Resources**

- Reading: Reading: Textbooks and resources 10 min
- **Reading:** References 10 min
- **Reading:** Notations 10 min
  - **Reading:** Acknowledgments 10 min

## **Notations**

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

Linear Algebra for Machine Lear... > Week 4 > Notations

A,B,C	capital letters represent matrices
u,v,w	lowercase letters represent vectors
A of size $m  imes n$ or $(m  imes n)$	matrix $A$ has $m$ rows and $n$ columns
$A^T$	the transpose of matrix $oldsymbol{A}$
$v^T$	the transpose of vector $oldsymbol{v}$
$A^{-1}$	the inverse of matrix $oldsymbol{A}$
$\det\left(A ight)$	the determinant of matrix A
AB	matrix multiplication of matrices ${\it A}$ and ${\it B}$
$u\cdot v;\langle u,v angle$	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 $\mathbb{R}^2$
$ v _1$	L1-norm of a vector
$ v _2; v ;\ v\ $	L2-norm of a vector
$T:\mathbb{R}^{2} ightarrow\mathbb{R}^{3};T\left( u ight) =w$	transformation $T$ of a vector $v \in \mathbb{R}^2$ into the vector $w \in \mathbb{R}^3$

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## Challenge yourself!

About **55%** of learners didn't pass this exam on their first try. But don't worry, you can always try again!

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