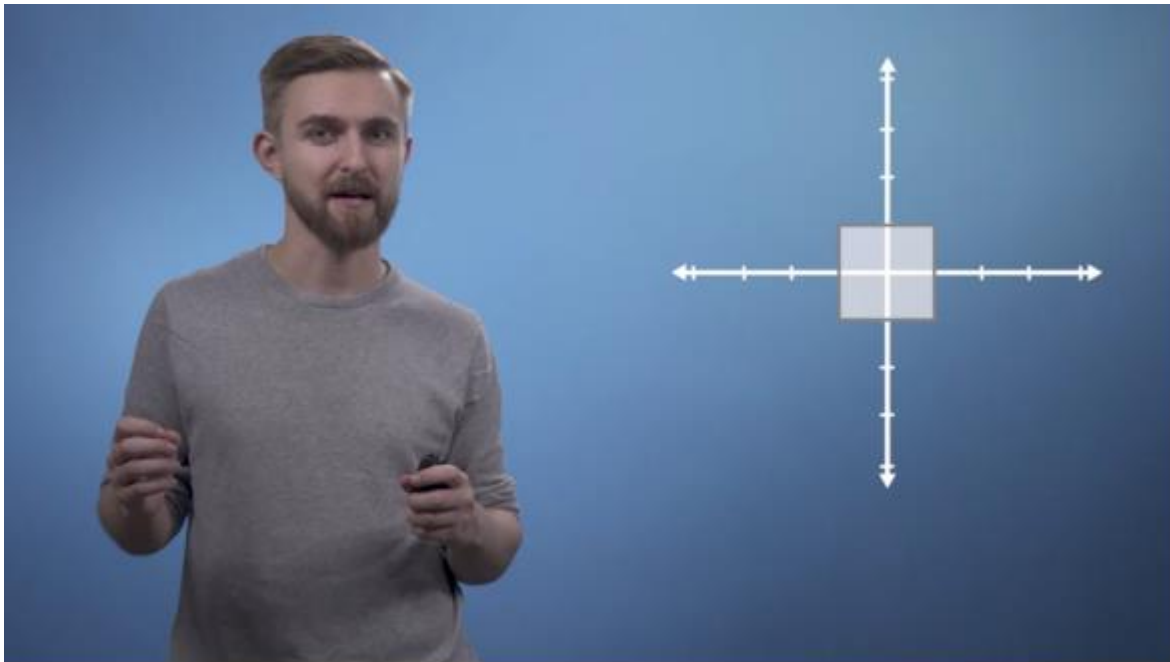


## DAILY ASSESSMENT FORMAT

Date:	17 <sup>th</sup> July 2020	Name:	Sahana S R
Course:	coursera	USN:	4AL17EC083
Topic:	Mathematics for machine learning: Linear Algebra	Semester & Section:	6 <sup>th</sup> /B
Github Repository:	sahanasrcourse		

### FORENOON SESSION DETAILS

Image of session



$$A = \begin{pmatrix} 1 & 0 \\ 0 & 2 \end{pmatrix} \quad \det \begin{pmatrix} 1-\lambda & 0 \\ 0 & 2-\lambda \end{pmatrix}$$

$$(A - \lambda I)x = 0 \quad = (1-\lambda)(2-\lambda) = 0$$

$$@\lambda=1: \begin{pmatrix} 1-1 & 0 \\ 0 & 2-1 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} 0 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} 0 \\ x_2 \end{pmatrix} = 0$$

$$@\lambda=2: \begin{pmatrix} 1-2 & 0 \\ 0 & 2-2 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} -1 & 0 \\ 0 & 0 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \end{pmatrix}$$

Characteristic polynomials, eigenvalues and eigenvectors

Practice Quiz • 30 min

**Congratulations! You passed!**  
TO PASS: 60% or higher

**GRADE 100%**

**Characteristic polynomials, eigenvalues and eigenvectors**

TOTAL POINTS 10

1. Given a matrix  $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ , recall that one can calculate its eigenvalues by solving the characteristic polynomial  $\lambda^2 - (a+d)\lambda + (ad-bc) = 0$ . In this quiz, you will practice calculating and solving the characteristic polynomial to find the eigenvalues of simple matrices.

For the matrix  $A = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$ , what is the characteristic polynomial, and the solutions to the characteristic polynomial?

$\lambda^2 + 3\lambda + 2 = 0$

Mathematics for Machine Learning: Linear Algebra • Week 2 • Page Rank

**Programming Assignment: Page Rank**

**Passed - 10/10 points**

**Deadline** Pass this assignment by Aug 16, 11:59 PM PDT

**Instructions** My submission Discussions

Open the notebook seen in this module. Follow the instructions there and submit from inside the notebook. You can use this page once complete to check your score.

Good luck!

**How to submit**  
When you're ready to submit, you can upload files for each part of the assignment on the "My submission" tab.

Eigenvalues and eigenvectors

Graded Quiz • 25 min

**Congratulations! You passed!**  
TO PASS: 80% or higher

**GRADE 80%**

**Eigenvalues and eigenvectors**

LATEST SUBMISSION GRADE 80%

1. This assessment will test your ability to apply your knowledge of eigenvalues and eigenvectors to some special cases.

Use the following code blocks to assist you in this quiz. They calculate eigenvectors and eigenvalues respectively:

```

1 # Eigenvalues
2 H = np.array([[1.5, -1],
3              [2, 3, 2]])
4 vals, vecs = np.linalg.eig(H)
5 vals

```

**Run** **Reset**

[ 1.-0.5] 1.-0.5]

Imperial College  
London

07/17/2020

Sahana S R

has successfully completed

Mathematics for Machine Learning: Linear  
Algebra

an online non-credit course authorized by Imperial College London and offered through  
Coursera



David Dye and Samuel J. Cooper

COURSE  
CERTIFICATE



Verify at [coursera.org/verify/GOLMSY8CK619](https://coursera.org/verify/GOLMSY8CK619)  
Coursera has confirmed the identity of this individual and  
their participation in the course.

