Week 2 Overview

Overview

In this module, you will learn how matrices naturally arise from systems of equations and how to solve a system of linear equations using the elimination method. You will learn also how to compute the determinant of a matrix, its properties, and its applications. Finally, you will learn how to compute the inverse of a matrix and its relation with the determinant.

Learning Objectives

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Upon completion of this module, you will be able to:

1. Form and graphically interpret 2x2 and 3x3 systems of linear equations.
2. Solve a system of linear equations with multiple unknowns using the elimination method.
3. Compute the determinant of a square matrix and understand its relation with the concept of invertibility.
4. Calculate the inverse of a matrix, if it exists.
5. Use `NumPy` linear algebra package to solve a system of linear equations, and compute the determinant and the inverse of a matrix.

To-Do List

In order to successfully complete Module 2, please complete the following tasks in order:

1. Watch: Lecture Videos in Module 2.
2. Read: Lecture Slides in Module 2.
3. Read: Sections 2.1 - 2.5 and 5.1 in Strang's book.
4. Complete the Lab in Module 2.
5. Discuss: Attend our virtual office hours to discuss any concepts we have discussed so

far.

6. Complete Homework 2 published on the Assignments page.