7.0 Module Overview: Singular Value Decomposition

Module Overview

In this module we will talk about similar matrices, the Jordan canonical form, and the singular value decomposition (SVD). You will learn how to put any matrix in Jordan canonical form and use this form to check whether two matrices are similar.

Finally, the profound analysis of matrices into their SVD will be introduced, and you will learn how to apply the decomposition in practical problems, such as image compression.

Module Outcomes

As a result of this module, you will be able to do the following:

1. **Compute** the Jordan normal form of any matrix.
2. **Identify** similar matrices.
3. **Compute** the singular value decomposition of a (rectangular) matrix.

Assigned Reading

- Chapter 6: Sections 6.6–6.7

Module Outline

In this module, we will cover the following:

+ A. Lecture Videos

+ B. Live Session

+ C. Assessments