

Course 1: Linear Algebra for Machine Learning & Data Science

Overview

Trần Đức Mạnh

Ngày 31 tháng 1 năm 2023

Mục lục

1	System of linear equations: 2 variables	2
1.1	System of sentences	2
1.1.1	What is a system of sentences?	2
1.1.2	New concepts	2
2	System of linear equations: 3 variables	2

1 System of linear equations: 2 variables

1.1 System of sentences

1.1.1 What is a system of sentences?

- A system of sentences is just a group of sentences

- Example 1: A system of 2 sentences

System 1	System 2	System 3
The dog is Black	The dog is Black	The dog is Black
The cat is Orange	The dog is Black	The dog is White

- Example 2: A system of 3 sentences

System 1	System 2	System 3	System 4
The dog is Black	The dog is Black	The dog is Black	The dog is Black
The cat is Orange	The dog is Black	The dog is Black	The dog is White
The bird is Red	The bird is Red	The dog is Black	The bird is Red

1.1.2 New concepts

1. Complete, Redundant, Contradictory

- **Complete:** when *number of pieces of information = number of sentences*
Example: Ex1 - System 1, Ex2 - System 1
- **Redundant:** when there are same sentences
Example: Ex1 - System 2, Ex2 - System 2, Ex2 - System 3
- **Contradictory:** when there are sentences contradict each other
Example: Ex1 - System 3, Ex2 - System 4

2. Singular & non-Singular

- **Singular:** when the system is Complete
- **non-Singular:** when the system is not Complete

2 System of linear equations: 3 variables