ds_book

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12/4/22

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Preface

This book will cover data science concepts. This will contain longer form content from the ds_skills repository

1 Introduction

This is a book created from markdown and executable code.

See Knuth (1984) for additional discussion of literate programming.

2 Summary

This book will cover data science concepts. This will contain longer form content from the ds_skills repository

3

Mathematical Foundations

Algebra is arithmetic that includes non-numerical entites like x. I.E. $2 * x + 5 = 25$

Linear algebra was developed to solve linear equations. "Solving for unknowns within a system of linear equations". If there is a non-linear transformation it doesn't fall within this definition. It can provide study for objects such as lines, planes and hyperplanes. It can be traced back to ancient civilizations.

Tensors are a machine learning generalization of vectors and matricies to any number of dimensions. I.E. An extra dimension for the number of observations in the MNIST dataset.

Code examples and notebooks for the content above: Intro to linear algebra - Jon Krohn Linear Algebra 2: Matrix Operations - Jon Krohn Data Science from scratch(linear algebra) - Joel Grus * Colab Notebook #todo: Add colab to repo

Classes: Mathematical Foundations of Machine Learning - Jon Krohn Essence of linear algebra - 3brown1blue

4 Optimization

Optimization is the study of finding the best output from the best combination of inputs.

References

Knuth, Donald E. 1984. “Literate Programming.” *Comput. J.* 27 (2): 97–111. https://doi.org/10.1093/comjnl/27.2.97.