

Probabilistic Modeling and Statistical Computing

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Preface

This book serves as an introduction to data science, written with the goal of meeting you wherever you're at in your educational/career journey, regardless of your background in math or computer science. That is to say, we don't assume any background in STEM, only the desire to learn and the work ethic to put in the hours needed to become comfortable with each topic!

It is the companion to the course DSAN5000: Data Science and Analytics, taught at Georgetown University in the Fall of 2023.

1 Introduction

This is a book created from markdown and executable code.

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

Part I

Data Science Workflow

2 Data Science Workflow

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3 Data Gathering and APIs

Part II

Data Cleaning and Analysis

4 Data Cleaning and Tidy Data

Data cleaning

5 Exploratory Data Analysis

Part III

Machine Learning Fundamentals

6 Optimization

7 Introduction to Classification

Part IV

Machine Learning Algorithms

8 Classification Algorithms

9 Neural Networks

10 Unsupervised Learning and Clustering

Part V

Applications

11 Network Data

12 Image Data

13 Natural Language Processing

14 Summary

In summary, this book has no content whatsoever.

References

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