



Designing Machine Learning Systems with Python

David Julian

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Key Features

- Gain an understanding of the machine learning design process
- Optimize machine learning systems for improved accuracy
- Understand common programming tools and techniques for machine learning
- Develop techniques and strategies for dealing with large amounts of data from a variety of sources
- Build models to solve unique tasks

Book Description

Machine learning is one of the fastest growing trends in modern computing. It has applications in a wide range of fields, including economics, the natural sciences, web development, and business modeling. In order to harness the power of these systems, it is essential that the practitioner develops a solid understanding of the underlying design principles.

There are many reasons why machine learning models may not give accurate results. By looking at these systems from a design perspective, we gain a deeper understanding of the underlying algorithms and the optimisational methods that are available. This book will give you a solid foundation in the machine learning design process, and enable you to build customised machine learning models to solve unique problems. You may already know about, or have worked with, some of the off-the-shelf machine learning models for solving common problems such as spam detection or movie classification, but to begin solving more complex problems, it is important to adapt these models to your own specific needs. This book will give you this understanding and more.

What you will learn

- Gain an understanding of the machine learning design process
- Optimize the error function of your machine learning system
- Understand the common programming patterns used in machine learning
- Discover optimizing techniques that will help you get the most from your data
- Find out how to design models uniquely suited to your task

About the Author

David Julian is currently working on a machine learning project with Urban Ecological Systems Ltd and Blue Smart Farms (http://www.bluesmartfarms.com.au) to detect and predict insect infestation in greenhouse crops. He is currently collecting a labeled training set that includes images and environmental data (temperature, humidity, soil moisture, and pH), linking this data to observations of infestation (the target variable), and using it to train neural net models. The aim is to create a model that will reduce the need for direct observation, be able to anticipate insect outbreaks, and subsequently control conditions. There is a brief outline of the project at http://davejulian.net/projects/ues. David also works as a data analyst, I.T. consultant, and trainer.

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