

1. Record Nr.	UNINA9911046653703321
Autore	Moriarty Sean
Titolo	Machine learning in Elixir : learning to learn with Nx and Axon / / Sean Moriarty
Pubbl/distr/stampa	[Raleigh, North Carolina] : , : The Pragmatic Programmers, LLC, , [2024] ©2024
ISBN	9798888651261 9798888651278
Edizione	[First edition.]
Descrizione fisica	1 online resource (359 pages)
Disciplina	006.31
Soggetti	Machine learning Elixir (Computer program language)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Cover -- Table of Contents -- Disclaimer -- Acknowledgments -- Preface -- Why Elixir for Machine Learning? -- Who This Book Is For -- What's in This Book -- How to Use This Book -- Part I-Foundations of Machine Learning -- 1. Make Machines That Learn -- Classifying Flowers -- Learning with Elixir -- Wrapping Up -- 2. Get Comfortable with Nx -- Thinking in Tensors -- Using Nx Operations -- Representing the World -- Going from def to defn -- Wrapping Up -- 3. Harness the Power of Math -- Understanding Machine Learning Math -- Speaking the Language of Data -- Thinking Probabilistically -- Tracking Change -- Wrapping Up -- 4. Optimize Everything -- Learning with Optimization -- Regularizing to Generalize -- Descending Gradients -- Peering into the Black Box -- Wrapping Up -- 5. Traditional Machine Learning -- Learning Linearly -- Learning from Your Surroundings -- Using Clustering -- Making Decisions -- Wrapping Up -- Part II-Deep Learning -- 6. Go Deep with Axon -- Understanding the Need for Deep Learning -- Breaking Down a Neural Network -- Creating Neural Networks with Axon -- Wrapping Up -- 7. Learn to See -- Identifying Cats and Dogs -- Introducing Convolutional Neural Networks -- Improving the Training Process -- Going Beyond Image Classification -- Wrapping Up -- 8. Stop Reinventing the Wheel -- Identifying Cats and Dogs Again -- Fine-Tuning Your Model --

Understanding Transfer Learning -- Taking Advantage of the Machine Learning Ecosystem -- Wrapping Up -- 9. Understand Text -- Classifying Movie Reviews -- Introducing Recurrent Neural Networks -- Understanding Recurrent Neural Networks -- Wrapping Up -- 10. Forecast the Future -- Predicting Stock Prices -- Using CNNs for Single-Step Prediction -- Using RNNs for Time-Series Prediction -- Tempering Expectations -- Wrapping Up -- 11. Model Everything with Transformers -- Paying Attention. Going from RNNs to Transformers -- Using Transformers with Bumblebee -- Wrapping Up -- 12. Learn Without Supervision -- Compressing Data with Autoencoders -- Learning a Structured Latent -- Generating with GANs -- Learning Without Supervision in Practice -- Wrapping Up -- Part III-Machine Learning in Practice -- 13. Put Machine Learning into Practice -- Deciding to Use Machine Learning -- Setting Up the Application -- Integrating Nx with Phoenix -- Seeding Your Databases -- Building the Search LiveView -- Wrapping Up -- 14. That's a Wrap -- Learning from Experience -- Diffusing Innovation -- Talking to Large Language Models -- Compressing Knowledge -- Moving Forward -- Bibliography -- Index --- DIGITS - - - A - - - B - - - C - - - D - - - E - - - F - - - G - - - H - - - I - - - J - - - K - - - L - - - M - - - N - - - O - - - P - - - Q - - - R - - - S - - - T - - - U - - - V - - - W - - - X - - - Y - - - Z -.

---

#### Sommario/riassunto

Machine Learning in Elixir, authored by Sean Moriarity, explores the integration of machine learning capabilities within the Elixir programming language using the Nx ecosystem. The book provides a comprehensive guide for Elixir programmers to develop machine learning models and applications, covering foundational concepts, deep learning techniques, and practical implementation strategies. It aims to equip developers with the skills needed to use Elixir for machine learning tasks, traditionally dominated by languages like Python. The book also highlights the advantages of functional programming in machine learning and offers practical examples and tools to facilitate learning. It is intended for software developers and those interested in exploring machine learning through the lens of Elixir.

---