Neural Networks and Deep Learning

Neural Networks and Deep Learning is a free online book. The book will teach you about:

- Neural networks, a beautiful biologically-inspired programming paradigm which enables a computer to learn from observational data
- Deep learning, a powerful set of techniques for learning in neural networks

Neural networks and deep learning currently provide the best solutions to many problems in image recognition, speech recognition, and natural language processing. This book will teach you many of the core concepts behind neural networks and deep learning.

For more details about the approach taken in the book, see here. Or you can jump directly to Chapter 1 and get started.

Neural Networks and Deep Learning What this book is about On the exercises and problems

- Using neural nets to recognize handwritten digits
- ▶ How the backpropagation algorithm works
- Improving the way neural networks learn
- A visual proof that neural nets can compute any function
- ▶ Why are deep neural networks hard to train?
- ▶ Deep learning
 Appendix: Is there a *simple*algorithm for intelligence?
 Acknowledgements
 Frequently Asked Questions

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Resources

Michael Nielsen on Twitter

Book FAQ

Code repository

Michael Nielsen's project announcement mailing list

Deep Learning, book by Ian Goodfellow, Yoshua Bengio, and Aaron Courville

cognitivemedium.com



By Michael Nielsen / Jan 2017

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