

Frequently Asked Questions

Is there a pdf or print version of the book available, or planned? There's no pdf or print version available, nor planned.

People sometimes suggest that it would be easy to convert the book to pdf or print. However, the book contains dozens of interactive JavaScript elements, and the narrative often depends on the reader interacting with those elements in some way. Doing the "easy" conversion would result in a poor quality product. Of course, those interactive parts could be rewritten to make sense in static form, but doing it well would be a big job.

Can you help me with a mathematical problem, or with debugging my work? No. I suggest chatting about your problem with friends or colleagues. If that's no help, try an appropriate online forum to ask your question.

Do you have solutions to the exercises and problems?
Sorry, no.

I'd like to do a translation into another language. Is that okay? It's fine under the terms of the book's license (see the page footer for details), provided: (1) you're not doing it for a product which is commercial in some way (e.g., you intend to sell it); and (2) you acknowledge me as the original author. I'd also appreciate a link, of course. If you have a commercial interest, please get in touch so we can discuss (mn@michaelnielsen.org).

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](#)

If you benefit from the book, please make a small donation. I suggest \$5, but you can choose the amount.

[Donate](#)



Alternately, you can make a donation by sending me Bitcoin, at address

1Kd6tXH5SDAmiFb49J9hknG5pqj7KStSAX

Sponsors



Deep Learning Workstations starting at \$6,999: [learn more](#)



Deep Learning Workstations, Servers, and Laptops



Thanks to all the [supporters](#) who made the book possible, with especial thanks to Pavel Dudrenov.

Thanks also to all the contributors to the [Bugfinder Hall of Fame](#).

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](#)



In academic work, please cite this book as: Michael A. Nielsen, "Neural Networks and Deep Learning", Determination Press, 2015

Last update: Tue Jun 11 16:58:53 2019

This work is licensed under a Creative Commons Attribution-NonCommercial 3.0 Unported License. This means you're free to copy, share, and build on this book, but not to sell it. If you're interested in commercial use, please [contact me](#).

