ARTIFICIAL INTELLIGENCE : A Modern Approach by Russell&Stuart

This book, as far as I know, is one of the best if not the best course book when it comes to artificial intelligence. It is quite voluminous, as far as I know most universities use a year to study this book. But even then, I doubt how deep they get into the book.

They structure the book under seven parts, which are:

1. Artificial Intelligence
2. Problem-solving
3. Knowledge, reasoning, and planning
4. Uncertain knowledge and reasoning
5. Learning
6. Communication, perceiving, and acting
7. Conclusions.

Parts 2-6, in my opinion, main expectancies from a system to be considered intelligent. Under these sections, there are 27 chapters in total.

Being a course book, this book is hard to understand occasionally for someone outside of the field. But language is always a clear and usually a deeper research onto the topic allows better understanding.

One thing, I really love about this book is that there is section called “Summary, Bibliographical and Historical Notes, Exercises”. Under summary, they provide a very brief summary of the main points of the sections. It is very short, usually around 1 page. Bibliographical and Historical notes was very interesting. This part can be considered a very brief history lesson about that chapter, where they mention important people, opinions or findings. And then they conclude it with impactful journals, books, and conferences regarding that chapter. These notes can be very useful for research purposes as well.

Exercises are also quite interesting. But I must say that they are not that easy. Some of the exercises, I think, can easily be considered as an entire semester project.

It is an important book to have in the library for someone who intends to work in ML/AI. But, it is far too heavy for someone not in the field.

As far as I know, the authors are preparing a new edition of the book. This time the deep learning chapter is being written by none other than Ian Goodfellow himself.