

LEARNING MADE EASY



# Artificial Intelligence

ALL-IN-ONE

for  
**dummies**<sup>®</sup>  
A Wiley Brand



Chris Minnick et al.





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## Artificial Intelligence All-in-One For Dummies®

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# Introduction

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**A**rtificial intelligence (AI) is generally defined as the theory and development of computer systems that can do tasks that normally require human intelligence.

In the early days of what we now call AI, the idea of a mechanical brain existed in the heads of science fiction writers and a few visionaries such as Edmund Callis Berkeley, who wrote “Giant Brains, or Machines that Think” (1949) and Alan Turing, who wrote “Computer Machinery and Intelligence” (1950).

In his famous paper, Turing proposed a test of machine intelligence called the “Imitation Game,” which is known today as the Original Turing Test. The test proposed a party game in which a man and a woman are interrogated by a third party in another room whose goal is to determine which person is the man and which is the woman. Turing then asked whether it would be possible for a digital computer to do well as the interrogator in this game.

In another version of the Turing Test, known today as the “Standard Turing Test,” a human judge evaluates a text transcript of a conversation between a human and a machine and attempts to determine which is which. I recommend you try playing this game at home with ChatGPT or another AI chatbot. Let me know if anyone was fooled by the chatbot. (You can email me at [chris@minnick.com](mailto:chris@minnick.com).)

It wasn’t until the early 2020s that we had AI capable of passing a modern version of the Standard Turing Test. Whether this means that we truly have machines that can think as we do is hotly debated, with most AI experts agreeing that we’re not there (yet) and that the Turing Test is outdated (see Chapter 1 of Book 1).

Theory and history aside, a vast body of technical knowledge about how to create AI systems has developed over the last 100 years. The technical details involve mathematics, computer programming, computer hardware engineering, linguistics, and many other highly technical fields. To attempt to write a book that teaches every aspect of creating AI systems would likely result in a book many times longer than the one you currently hold in your hands (or that’s on your e-reader).

This book is not about the history of AI or about the technical details of creating AI systems. While it does explain the purpose and use of many of the technical topics involved in AI, you don't need to be a mathematician or computer programmer to read it.

What this book does cover is everything you need to know to make use of the latest AI applications, such as ChatGPT and Microsoft Copilot (among others), to help you in your job, education, home life, finances, creative projects, and much more. Carefully compiled (by yours truly) from the best chapters in 10 different *For Dummies* books about AI, this single book is your complete guide to working hand in hand (or hand in CPU) with AI, whether your goal is to be more productive, land a new job, start a new AI-focused business, or simply to learn what all the hype is about.

Enjoy, and thank you for reading this book! If you have any questions, please reach out to me at [chris@minnick.com](mailto:chris@minnick.com).

## About This Book

AI is changing the way we work, communicate, research, learn, and just about every other aspect of daily life. How significant the change turns out to be and how much better the current technology can get still remains to be seen. One thing is certain, however: the outputs you get from any AI tool are heavily dependent on the quality of what you put into them. Garbage in, garbage out, as the saying goes.

This book teaches you how to work with AI tools to enhance many of the things you do every day and how to coax AI into giving you consistently high quality responses. In the process, you also learn what AI can (and can't) do and hear ideas and explanations from an all-star team of technology writers, computer scientists, and AI researchers. I want to point out just one helpful convention that you'll see throughout the book. When we define a term for you in the text, the term appears in *italics*.

To make the content more accessible, we divided it into seven mini-books:

» **Book 1: Understanding AI Foundations.** In this book, you learn the fundamental concepts of AI, including how algorithms, data, and computers (lots of computers) work together to train machine learning models. You also explore what it means to build and use AI systems responsibly and what the increased use of AI will mean for human workers.

- » **Book 2: Prompting and Generative AI Techniques.** In this book, you learn about the exciting world of generative AI (GenAI). You gain skills in prompting large language models (LLMs) and learn about two of the most important GenAI applications: OpenAI ChatGPT and Microsoft Copilot.
- » **Book 3: Increasing Productivity with AI.** In this book, you learn about using GenAI to increase productivity in the workplace. Whether you're working with text, data, presentations, or other people, GenAI can help you do it more effectively. You also learn about some of the potential pitfalls of AI integrations with common productivity apps and how to manage AI adoption and change in an organization.
- » **Book 4: Creating Content with AI.** In this book, you learn how to generate content with AI. You see how an AI assistant can help you brainstorm and plan, draft emails, create images, and write long-form content such as blog posts, articles, and even books.
- » **Book 5: AI at Home.** In this book, you learn about how AI is being used (and will be used in the future) to help people with their everyday lives outside of work. You see the uses and effects that AI is having in a variety of different areas, such as medicine, education, research, and financial planning.
- » **Book 6: Applying AI in Coding.** In this book, you learn about working with AI assistants to write computer code. If you already know something about writing computer code, AI can help you code faster and better. If you've never written a line of code, AI can be your personal tutor and collaborator and help you get from a great idea for your app to a working prototype.
- » **Book 7: Creating Custom AI Solutions.** If you're ready to move beyond general-purpose chatbots, this book teaches you how to create custom GenAI agents that can act as customer service representatives, research assistants, and even the secret ingredient that helps you grow your business.

## Foolish Assumptions

I don't make many assumptions about you, the reader, but I do have a couple questions for you to ask yourself before you dive into the rest of the book. Answer "Yes" or "No" to each of the following questions to determine whether this book is a good fit for you. Don't worry; this will be a quick and easy quiz.

1. Are you curious about how you can use AI to help you in your life, job, recreation, creative projects, and more?

2. Are you comfortable using a computer, smartphone, or tablet? For example, do you know how to turn it on and access web pages or apps?
3. Are you willing to keep an open mind while also being appropriately skeptical about the capabilities and limitations of AI?

Those are all the questions I have — I told you it would be easy. If you answered “Yes” to at least one of my questions, you will benefit from the wisdom and experience this book has to offer.

## Icons Used in This Book

Throughout this book, icons in the margins highlight certain types of valuable information that call out for your attention. Here are the icons you’ll encounter and a brief description of each.



TIP

The Tip icon marks tips and shortcuts that you can use to make a task or use a particular tool easier.



REMEMBER

Remember icons mark the information that’s especially important to know. To siphon off the most important information in each chapter, just skim through these icons.



TECHNICAL  
STUFF

The Technical Stuff icon marks information of a highly technical nature that you can normally skip over.



WARNING

The Warning icon tells you to watch out! It marks important information that may save you headaches or, in the case of AI, will steer you away from questionable, unreliable, or unsafe uses of AI.

## Beyond the Book

In addition to the abundance of information and guidance related to AI that we provide in this book, you get access to even more help and information online at *Dummies.com*. Check out this book’s online Cheat Sheet. Just go to *www.dummies.com* and search for “AI All-In-One For Dummies Cheat Sheet.”

# Where to Go from Here

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Now that you know a little bit about what to expect in the following pages, the next step is up to you! This book isn't meant to be read straight through cover to cover (although you're certainly welcome to do that!). If you're interested in learning a bit about the technical underpinnings of AI, start with Book 1. But these technical details aren't essential to your being able to use and understand the techniques covered in the other books. If you'd rather skip the technical stuff (for now, at least), find another book or chapter that interests you and dive in!

