These Books in Brief

Volume 1: Foundations and Practice

AI is everywhere—and almost nobody understands how it actually works. This book fixes that. In simple, accessible steps, *Volume 1: Foundations and Practice* walks you from "What is AI? I mean really?" to genuine understanding—the kind where things finally click. No technical background required. No math. Just curiosity, a pen, and a willingness to try things.

Across four chapters, you'll explore the nature of intelligence itself, go inside modern AI systems to see how pattern recognition and probability produce both impressive capabilities and surprising failures, learn the art of communicating with AI effectively, and confront where hidden biases arise—and what we can do about them.

What makes this book different is its *field journal* approach. You don't just read about AI—you experiment with it, test its limits, and document what you discover. Along the way, we encourage you to begin a creative project that may surprise you. Have you been carrying a story inside for years? This is a way to bring that story into the light.

A flexible reading guide lets you take the path that fits your life. This is where your journey into a new world with AI begins.

Volume 2: Society and the Future

Volume 2 begins with a question many people quietly wonder about: what *is* AI, really? Not just what it does, but what it is. Could a system like this ever be aware? The answer is more fascinating than most people expect.

From there, the scope widens. Readers explore how AI systems influence hiring, education, and justice; how algorithmic decisions affect real lives; how to tell real from fake in a world where machines can generate convincing images, voices, and text; and who ultimately benefits as AI reshapes economies and institutions. AI is already shaping opportunities, distorting information, and concentrating power in ways most people haven't noticed yet.

As in Volume 1, the field journal approach continues. Readers experiment with AI, examine real cases, and reflect on what they discover while bringing their creative project to fruition.

By the end, you'll have something we all need: an informed and well-balanced perspective on a technology rapidly reshaping the modern world.

Understanding and Working with AI

Volume 1: Foundations and Practice

Chapter One

Intelligence

Chapter Two

Teaching Machines

Chapter Three

Prompt Engineering

Chapter Four

AI Bias

Volume 1

Understanding and Working with AI

Volume 2: Society and the Future

Chapter Five

Magic from Math

Chapter Six

AI Algorithms and People

Chapter Seven

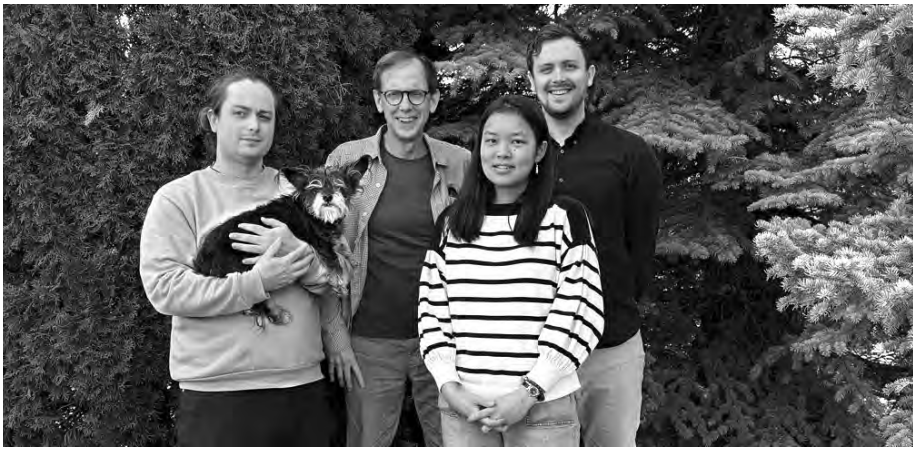
AI in Media

Chapter Eight

An AI-Powered Future

Volume 2

Welcome to This Program



Left to right: Ian Suchocki, Frank Zappa, John Suchocki, Evi Judge, Reece Suchocki

About This Program

You're about to begin a journey into one of the most significant technological developments of our time. Artificial intelligence is already shaping how we communicate, create, learn, and even work. This program is designed to help you understand it clearly, use it effectively, and think about it critically.

Together, we'll explore *how* AI works with pattern recognition, correlation, and probability so you can see for yourself where AI excels and where it struggles. You'll experiment directly with AI tools, develop your own creative project in collaboration with an AI and examine the social, ethical, and civic questions that this technology raises.

Along the way, you'll learn to verify information in an age of synthetic media, maintain your authentic voice while collaborating with AI, and think structurally about how power operates around these systems. That's a tall order. But we're here as your guides to walk with you step by step in a simple, joyful, yet meaningful manner.

Good generations to you!

Meet the Team

John

Welcome! I'm a science instructor, your video host, and the architect of this program on understanding and working with AI. Of course, AI is a tool. And like any tool, first you need to know how it works, and then how to use it effectively.

Reece

As a computational linguist, my main role has been guiding the direction and assuring technical accuracy. You're going to love this program. It's full of insightful and useful information, but, mostly, it's full of heart and level-headed optimism.

Ian

As a cultural anthropologist, my role has been developing the later chapters where we dig into the many social impacts of AI. Thank you for taking this program on how AI works and how we can work with AI to make this world a better place.

Evi

I too am a trained computational linguist as well as a professional prompt engineer. I'm a reviewer of this program, but my main role is as the artist of all the fun line drawings you'll see throughout this insightful program.

Frank

I know, I know. A mascot introducing itself. But I'm Frank. Through Evi's art, you'll find me cheering you along throughout this animal and human friendly program where you'll have fun with lab experiments and in producing a creative literary work. Ruff!

Your AI Model

Throughout this book you'll work directly with an AI chatbot. You're welcome to use any AI model you prefer — the activities work with all of them. If you have a favorite, use it. If not, here's a quick orientation.

The Major Models

ChatGPT (by OpenAI) is the most widely recognized AI assistant. It often provides thorough, energetic responses — sometimes more detail than you asked for. It performs well across writing, coding, brainstorming, and problem-solving.

Claude (by Anthropic) tends toward measured, thoughtful responses and is particularly strong at following nuanced instructions. It's often praised for careful reasoning and a willingness to acknowledge uncertainty when appropriate, though it can sometimes lean cautious in ambiguous situations.

Gemini (by Google) integrates closely with Google's ecosystem and is especially useful for research-oriented and multimodal tasks. Its responses can feel more formal or utility-focused, with strengths in search-connected and productivity workflows.

Copilot (by Microsoft) is embedded across Microsoft products and powered largely by OpenAI's technology. It's optimized for task completion within Word, Excel, and Outlook, making it convenient for users already in Microsoft's environment.

Other AI tools are emerging rapidly, including search-oriented models like Perplexity and platform-specific ones like Grok. The landscape will look different by the time you read this—which is itself a lesson in how fast this technology moves.

Don't worry about choosing the "right" one. Part of AI literacy is discovering these differences for yourself—and several of our lab activities will ask you to do exactly that. It often works well to take the output of one AI model and pass it through another. Then take that output and feed it back to the first. Back and forth, two or more AIs competing with each other for your benefit, each with their own idiosyncrasies. This will become more clear as we proceed.

This Program Online

This book is the complete program, and you can work through it with any AI model and a field journal. But you should know that the full curriculum is also hosted on interactive online platforms where the text, illustrations, and video lessons are woven together within each lesson. These platforms include **PocketLab Notebook** (designed for high school classrooms) and **Conceptual Academy** (designed for self-study and college courses). Both platforms include formative and summative assessment tools for grading and certification, including continuing education credit upon completion.

If you are a teacher, tutor, parent, professor, or professional looking for a way to bring AI literacy to your students — and it is hard to imagine a more timely subject — these platforms provide everything you need: structured lesson plans, assessment tools, and guided AI lab environments ready for classroom use. This book is an ideal place to start. Read it, engage with it, and you'll be well prepared to bring this material to others.

Meet Alia

Within these online platforms, we also offer access to **Alia**, our own AI model customized specifically for this program. Alia comes in several forms: as a *lab partner* for the experiments in this book, as a *creative collaborator* for the writing project, and as a personal *tutor* for studying and exam preparation. Because Alia is built for this course, it understands the context of each lesson and can guide you in ways that a general-purpose AI cannot.

Importantly, Alia is designed with student privacy in mind: your conversations are not used to train other AI models, and your data is not shared with third parties. For schools and parents who care about digital privacy—and you should—this matters.

Bottom line: You can learn everything in this book with whatever AI model you have handy. But if you want the integrated experience—video lessons, guided activities, assessment tools, and a purpose-built AI companion—visit us online. Meanwhile, the QR codes throughout this book will take you to the relevant video lessons providing you a rich learning experience.

Introduction

This Book Asks Something of You

You're holding a book about artificial intelligence. There are many such books. Most will tell you what AI is, how it works, and why it matters. You'll read them, nod along, feel informed, and move on. This is not that kind of book.

This book grows from a curriculum where students don't simply read about AI—they experiment with it, discuss and document their findings, test its limits, and build alongside it. What you're holding is the intellectual core of that curriculum. This core moves beyond the informational to the formational.

A book about AI that you merely read, absorb, and shelve risks proving AI's critics right. One of the great concerns surrounding artificial intelligence is that it may tempt us toward intellectual passivity—that we will outsource our thinking, mistake fluency for understanding, and accept polished surfaces in place of depth. A passive book about AI would participate in that very problem. It would give you the feeling of comprehension without the discipline of it.

On something as consequential as AI, we all deserve better. And that's why this book asks something of you. It asks you to pick up a pen.

The Field Journal Approach

Throughout these pages you will find experiments to conduct, questions to wrestle with, boundaries to test, and reflections to record. We call this the field journal approach.

The practice comes from the sciences—from naturalists who logged species in notebooks, astronomers who tracked celestial motion night after night, researchers who understood that an unrecorded observation is often a forgotten one. Discovery does not happen only in the mind. It happens through disciplined attention.

There is a profound difference between reading about an idea and testing it yourself. Perhaps you have read that AI sometimes generates confident but completely incorrect information—a phenomenon called **hallucination**—and think, *that's interesting*. Or perhaps you have heard you can ask an AI a question only to watch it respond with total confidence but total error! The second experience stays with you. The first fades. Neither are good.

The field journal is where those shifts in understanding accumulate. It can be in any format of your choice: a notebook, a digital document, or a stack of index cards. What matters is that when something surprises you, you record it. When a question nags at you, you capture it. When your thinking changes, you document the change.

Will every reader do this? Of course not. You can read this book straight through and learn something. Surface understanding is better than none. But if you engage fully—if you experiment, reflect, and write—you will develop something far more durable: the ability to think about AI from direct experience rather than secondhand description.

More Than Understanding AI — Working with AI

Understanding AI is only half the task. The other half is learning how to work with AI without surrendering one's judgment.

How many of us have dreamed of writing a novel? Or wished we could finally get that autobiography down on paper? Or imagined crafting a screenplay, a collection of poems, a children's book, a family history? How many of us have carried a story inside for years—maybe decades—but never found the time, the confidence, or the stamina to get it out?

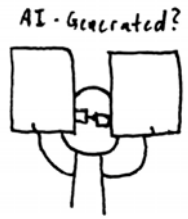
This book includes a creative project not as a novelty, but as a proving ground. It is central to the experience, because learning *about* AI is only half the equation. The other half is learning to *work with* AI—and creative collaboration is where your AI whispering skills become real.

A Note on Origins

The curriculum emerged from lived experience. Co-author John wrote a science fiction novel in collaboration with AI at the encouragement of his son, Reece—a computational linguist and today one of this program's co-authors. The result was not a shortcut but a discipline. It required taste, revision, rejection, direction. It required authorship. But the experience was fun, meaningful, and immersive. The process worked so well that John did it twice — first as a compact science fiction tale, and then as an epic historical novel.

In the preface to the first novel, John made a casual observation: any eleventh grader could and should now be assigned the task of creating a novel of their own choosing, gaining invaluable experience as a developmental editor along the way. That offhand remark became a cornerstone of this curriculum. The creative project you'll find in these pages grew directly from that experience.

Authorship Over the Tool



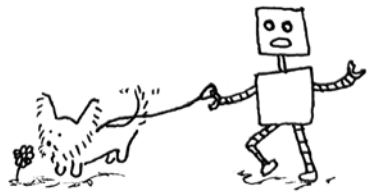
AI will not write your creative work for you—not in any realistic sense. If you accept its first draft without resistance, you will get something generic and forgettable. It's that sort of hands-off practice that often places AI in a negative light. It's like blaming the horse for not taking you where you want to go as you sit idly on its back. Getting the horse to take you where you want to go requires skilled communication.

When properly saddled and controlled, AI offers is tremendous momentum. It can cut through the paralysis of the blank page. It can generate raw material. It tries again without fatigue. It will follow your lead when you assert it and challenge your ideas when you invite it. But you remain the author.

You bring vision, taste, lived experience, discernment. AI brings speed, variation, and inexhaustible iteration. Used well, the partnership can compress years of hesitation into weeks of disciplined progress. But only if you engage.

This is an example of where the field journal matters. It is where you track not just what AI produces, but how you shape it—what you accept, what you reject, what surprises you, and what that reveals about both the system and yourself. AI literacy is not about mastering a tool. It is about mastering yourself while using one.

What You'll Find Inside



This book unfolds in eight chapters, from foundational questions to sophisticated civic and ethical reflection. We keep it simple. You may likely, at times, think it too simple. But please stick with it. Each step is a baby step with a subtle forward trajectory. The journey succeeds because these baby steps are numerous.

We begin by asking what intelligence actually means—human, animal, and artificial—and why comparison reveals more than hierarchy. We then look under the hood of modern AI systems, exploring how pattern recognition, probability, and correlation generate both impressive capability and failure.

From there, the scope widens. We will examine bias—not as abstraction, but as measurable distortion with real consequences. We investigate how AI systems participate in hiring, healthcare, criminal justice, media, and education. We confront questions about fairness, accountability, and responsibility that resist easy answers.

Throughout, you, as a learner, will test boundaries. You will observe carefully. You will document what you find. The field journal ties the journey together. It is where information becomes insight.

Each chapter follows a rhythm you will quickly recognize:

- **Core Lessons** introduce essential ideas clearly and directly. You'll also find QR codes throughout that link to accompanying video lessons freely available to you.
- **Spotlights** explore extended case studies worth deeper attention. They are designed to be read and savored.
- **Labs** guide you through structured experiments with AI—structured enough to be productive, open enough to follow your curiosity.
- **Projects** advance your creative collaboration, building skills and developing your work chapter by chapter.
- **Reflections** ask you to step back, synthesize what you've learned, and connect it to the bigger picture.

You will also encounter review questions. Their presence may surprise you in a book that is not primarily a classroom text. They remain for a reason. There is a significant difference between believing you understand something and demonstrating that you do. You've just read a compelling explanation of how AI hallucination works. Can you identify it in a new context? That's a different question, and it's worth asking. The answer key is at the back of the book. No one is grading you. But you might be surprised by how much the practice deepens your understanding. Understanding requires effort. No one is exempt from that cognitive law.

Ready?

The AI revolution is not approaching. It is already here, embedded in your work, your news feed, your children's education, your creative tools, your civic institutions. You can engage with it passively—absorbing whatever appears, trusting whatever sounds fluent, drifting along with the current. Or you can investigate it directly.

This book offers tools, not conclusions, and the rest depends on you. Open your field journal, write today's date, and begin.

Good generations to you,
John, Reece, Ian, Evi, and Frank

Guide to Reading

This book is designed to meet you where you are. Each lesson is labeled by type—*Core Lesson, Spotlight, Reflection, Lab,* or *Project*—and those labels aren't just organizational. They're your menu. Depending on your time, your goals, and your curiosity, you can follow any of the pathways below. There's no wrong way through.

The Express

Core Lessons + Spotlights

Short on time but want the essentials? The Express gives you the full conceptual foundation of AI literacy: how AI learns, how to communicate with it effectively, where bias enters the picture, and why any of this matters. Core Lessons build the ideas. Spotlights zoom in on real-world implications and put those ideas in context. Together, they tell the complete story—just without the detours. You'll finish with a solid, practical understanding of what AI is, how it works, and how to think critically about it.

The Training Run

Core Lessons + Spotlights + Reflections

Adding Reflections changes the experience. These lessons slow things down in the best way—inviting you to wrestle with what you've learned, hear different perspectives, and develop your own position on the questions AI raises. Who benefits? Who's left behind? What does authenticity mean when machines can write? The Training Run builds not just knowledge but judgment. It's where understanding deepens into wisdom, and where your thinking starts to become genuinely your own.

The Expedition

Core Lessons + Spotlights + Reflections + Creative Project

Now you're creating something. The Creative Project runs alongside the chapters as an ongoing collaboration between you and AI. You direct, evaluate, and curate—developing a story, memoir, or creative work that's genuinely yours even though AI helps generate the prose. This is where the concepts stop being abstract and start being personal. If you've ever wanted to write something but felt blocked by the blank page, or if you're curious about what it actually feels like to work creatively with AI, this is the pathway for you.

The Full Course

Core Lessons + Spotlights + Reflections + Creative Project + Labs

This is the whole program—every lesson, every experiment, every discussion, every creative session. Labs put you face to face with a live AI, running structured experiments that reveal how these systems actually behave. You'll test boundaries, document surprises, and build the kind of firsthand knowledge that no amount of reading can replace. The Full Course is designed as a complete semester of study, suitable for classroom use, homeschool programs, or self-directed learners pursuing certification or professional credential. It's rigorous. It's hands-on. And it's the closest thing to an apprenticeship in AI literacy.

The Coffee Table

Browse as you see fit

Pick this book up from your coffee table. Flip through. Land on whatever catches your eye. Read a Lab from one chapter, then jump back to a Spotlight in another, then wander into a Reflection that sparks an understanding. There's no prerequisite police here. Each lesson is labeled, so you'll always know what kind of experience you're stepping into. And if something grabs you, the table of contents will show you where it fits in the larger story. Sometimes the best path is the one you make yourself. In machine learning, a random walk is a mathematical process where each step is determined by chance. Some of the most important discoveries in science have come from exactly this kind of unplanned exploration.

However you read this book, you're building something that matters: the ability to understand, direct, and think critically about the most transformative technology of our time. There's no wrong pace and no wrong order. Just start.