DS/AI

Self-Starter Handbook

BUILD YOUR OWN ROADMAP

Ankit Rathi

From a time around when DS/AI field started picking up, every other day I get at least 8–10 messages from DS/AI starters & enthusiasts on ‘How can I get into DS/AI field?’. Over a while, I have improvised my response based on the follow-up questions they ask like:

1. What is the difference between DS, ML, DL, AI, DM?

2. What are the roles in DS/AI, who does what?

3. What concepts, processes & tools they need to learn?

4. Which books, courses, etc they need to refer to?

5. How to build a DS/AI portfolio?

6. How to write a resume for DS/AI?

7. How to build a helpful network?

8. How to search for the job?

9. How to prepare for the interview?

10. How to stay up to date in this still-evolving field?

You can notice that these questions are not conceptual ones and there is no dedicated material to address these roadblocks. I thought why not to build a framework or a road-map for DS/AI starters and enthusiasts so that I need not to answer the same type of questions again and again. And that is when I started documenting what a starter or enthusiast need to do step by step in order to reach a level when he is ready to tackle any challenge thrown to him. My answer to the above questions in a structured way to help DS/AI starters & enthusiasts is this book. This book covers the framework to launch your DS/AI career in 8 chapters.

Ankit Rathi provides unique combination of Data Engineering (DB/ETL/DWH/BI)/Architecture (Data Management & Governance) & Data Science (ML/DL/AI) with more than a decade of demonstrated history of working in IT industry using Data & Analytics. His interest lies primarily in building end to end DS/AI applications/products following best practices of Data Engineering and Architecture.

In his free time, he blogs about various topics on DS/AI field & tries to simplify it for starters & enthusiasts.

ankitrathi.com

Rs 499/-

ISBN 978-1-64587-432-4

DS/AI Self-Starter Handbook

Build Your Own Roadmap

Ankit Rathi

To my wife, Divya, who's always accepted me the way I am and supported my hustle, drive & ambition.

To my children, Aarsh & Driti, who are the reason to wake up every morning and work as hard as I can.

DS/AI Self-Starter handbook is a great resource for aspirants starting in the space of Data Science. It covers approach and useful resources that can help in your learning journey and written by one who himself is an Data Science practitioner. I recommend this to anyone who are aspiring to get into Data Science and are looking for insights on how and where to get started.

Srivatsan Srinivasan
Chief Data Scientist (Cognizant)

Wow, this is very impressive! It has taken some time to review, but WOW!
I should have had you as a co-author next time!!!

T. Scott Clendaniel
Chief Data Scientist (Legg Mason)

To be great data scientist you should emphasis on skillset and mindset. Where a lot of book that give you skill set, this is the first book I read that dedicating to shape data scientist mindset.

Nabih Ibrahim Bawazir
Data Science Head (Datanest)

Extremely laudable & heroic attempt to put all your thoughts and experience together to help people.

Sumit Pal
Big Data Architect (Qcentive)

Ankit has done a great job summarizing what is possibly one of the toughest and most frequently asked questions, "How to get started with data science?". Packed with information, this book will definitely be helpful for people from both academia and industry looking to get started on their own Data Science and AI journey.

Dipanjan Sarkar
Data Scientist (Rad Hat)

I think it is a brilliant book for starting Career in Data Science as New Entrants to Data Science often deviate from Path to reach End Goal and this Book tries to solve that Problem in a easy way. I would really like to Congratulate Ankit for Providing Data Science Career Steps in this useful manner.

Yatin Bhatia
Data Scientist (RxLogix)

An indispensable guide and a valuable resource for anyone seeking to enter the field of Data Science. Replete with great advice directly from the author's personal experience.

Parul Pandey
Data Science Evangelist (H2O.ai)

This book kicks you into the right direction definitely worth reading for the beginners trying to break into DS/AI.

Avik Jain
Machine Learning Intern (EMA Solutions)

If you are one among people struggling to identify the right book for data science, this book would probably help to understand where to start, how to prepare, how to develop the habit of continuous learning.

Vishnu Durgha Prasaad
Data Science Practitioner

About the Author

Ankit Rathi is currently working as a Lead Architect-DS/AI at SITA aero. He is a Data Science (ML/DL/AI) practitioner with more than a decade of demonstrated history of working in IT industry using Data & Analytics. His interest lies primarily in the theory & application of artificial intelligence, particularly in developing business applications for machine learning and deep learning. Ankit's work at SITA aero has revolved around designing FlightPredictor product & building the CoE capability. During his tenure as a Principal Consultant at Genpact HCM, Ankit architected and deployed machine learning pipelines for various clients across different industries like Insurance, F&A. He was previously a Tech Lead at RBS IDC where he designed and developed various data intensive applications in AML & Mortgages area. Ankit is a well-known author for various publications (Towards Data Science, Analytics Vidhya etc) on Medium where he actively contributes by writing blog-posts on concepts & latest trends in Data Science. His blog-series on 'Probability & Statistics for Data Science' has been well received by Data Science community in 2018. He is followed by around 30K data science practitioners & enthusiasts on LinkedIn.

U0.1: Webpage: *https://www.ankitrathi.com/*

Table of Contents

About the Author **9**

Preface **13**

1 Understanding the Big Picture **19**

1.1 Navigating the landscape 22

1.2 Working on building blocks 23

1.3 Utilizing the resources 24

1.4 Building your portfolio 25

1.5 Networking & landing the job 25

1.6 Making Career Future-Proof 26

1.7 Putting it all together 27

2 Navigating the Landscape **31**

2.1 Multi-disciplinary field 33

2.2 Various Terminologies 35

2.3 Interconnection 37

2.4 DS/AI Roles 38

2.5 Academics Vs Industry 41

3 Working on Building Blocks **47**

3.1 Concepts to Learn 49

3.2 Process to Follow 54

3.3 Tools to Master 57

4 Utilizing the Resources **61**

4.1 Books to refer 63

4.2 Courses to Attend 67
4.3 Blogs to follow 70
4.4 Podcasts to listen 74
4.5 YouTube Channels 77
5 Building your Portfolio 87
5.1 Work on Public data-sets 88
5.2 Participate in Hackathons 95
5.3 Publish on Git-hub 99
5.4 Write a Blog 101
6 Networking & Landing the Job 105
6.1 Network on LinkedIn 106
6.2 Prepare the CV 110
6.4 Crack the interview 116
7 Making Career Future-Proof 121
7.1 Build 'Evolve' Mindset 123
7.2 Hone Core Skills 124
7.3 Develop Soft Skills 125
7.4 Maintain Digital Portfolio 126
7.5 Expand Network Globally 127
7.6 Monitor Industry Trends 128
8 Putting It All Together 131
8.1 Avoid Being a Junkie 133
8.2 Learn to Solve 135
8.3 Just Enough Approach 137
8.4 Conclusion 138

Chapter 1

Understanding the Big Picture

When you start learning a new skill, the first thing is to look at the big picture and where your would-be skills fit in the field. It gives you a context of what role you can play or are expected to play. And when the skill and field are evolving & overwhelmingly large, you are so engrossed in the details that most probably you tend to miss the purpose.

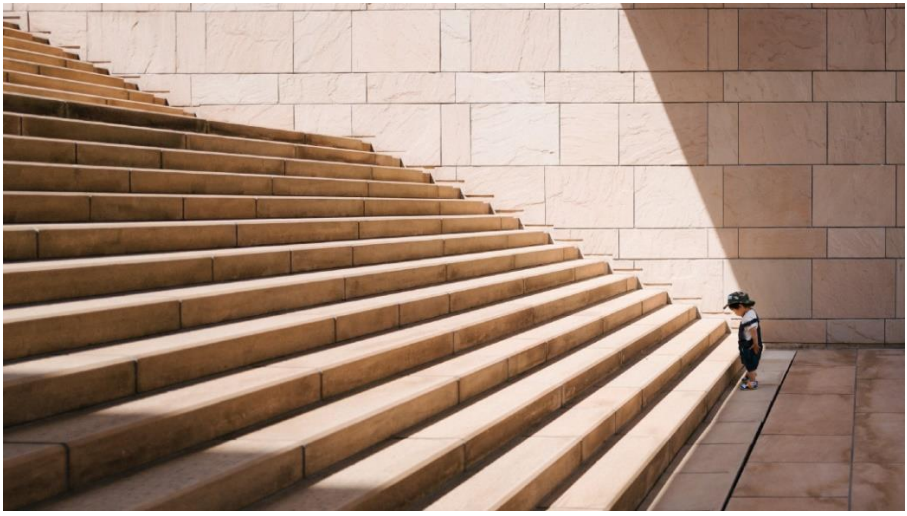
In my view, to understand the big picture, ask yourself 'why' more often and start with the end in your mind.

The following analogy is not particularly about DS/AI but in general.

Job — Interview — Network — Portfolio — Core skills — Resources — Awareness

As you can see above, to land the job you want you to need to crack the interview. To get the call for the interview, you need a network that can refer you for opportunities. To have a relevant & helpful network, you need to have impressive credentials or portfolio. To have a solid portfolio, you need to work on the core skills of the job role that you want. To build core skills, you need to have the right resources. To gather the right

resources, you need to have awareness of the field in which you want to build your career.

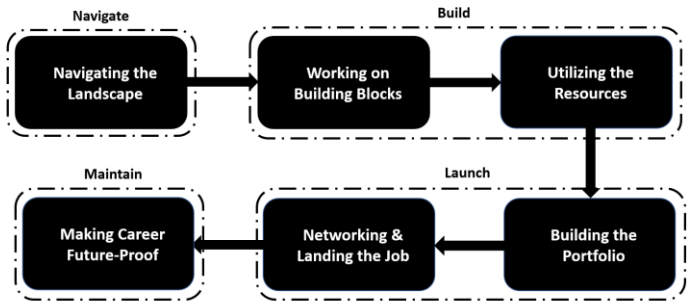


Now, reverse the order and assess at what stage you are and fill the gap in the coming months to build your career.

Based on the above approach, this chapter gives you a holistic view of what you need to know and do to build your road-map in DS/AI field.

In upcoming sections, you will get to know about these steps and their details are covered in subsequent chapters of the book.

Each section represents an upcoming chapter of this book.

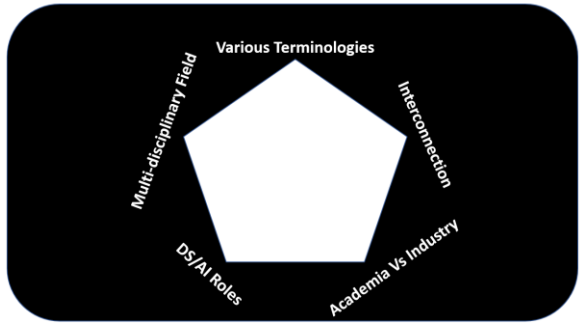


Understanding the Big Picture

DS/AI: Self-Starter Kit

1.1 Navigating the landscape

Before learning DS/AI, it is very much required that you understand the overall landscape and where all the buzzwords like data science, machine learning, deep learning fit in. In this chapter, you will learn different terminologies, their meaning and how these are interconnected.



Navigating the Landscape

DS/AI: Self-Starter Kit

DS/AI is a vast field, not a single person has all the required knowledge or does all day to day tasks. Due to the variety of skills required in data science projects, specific roles are evolving so that individual can contribute according to their abilities. In this chapter, you will get to know almost all the DS/AI roles, which will give you a better idea which one suits you.

1.2 Working on building blocks

This is the core part of DS/AI, knowing the concept, process & tools are the most important part of any job. Intrinsic details of the building blocks are not in the scope of this book. This chapter will make you aware of what is in the scope of DS/AI field and which role need to have what kind of skills.

Working on the Building Blocks
DS/AI: Self-Starter Kit

After completing this section you will get to know what is in the scope of DS/AI field. You can relate the concepts, process & tools based on the role you think you can fit in. Think of this chapter as the syllabus of DS/AI field with electives based on your role.

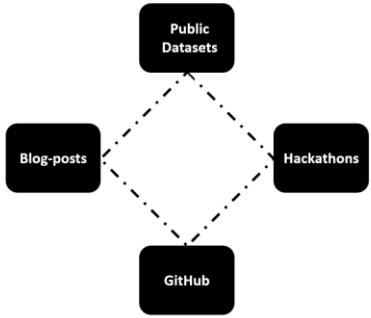
1.3 Utilizing the resources

There is no dearth of learning resources but that has only confused the starters in the data science field. I get many questions related to what books to read, what courses to enrol, what blogs/portals to follow, what data-sets to work on.

In this chapter, I will provide critical reviews of all the prominent books, courses, blogs, portals, data-sets & podcasts etc. Please note that this list is based on my exposure to the field, there may be additional and better resources but I think you will get enough exposure after going through this chapter to evaluate other resources comparatively.

1.4 Building your portfolio

Refining & honing the skills required for a job is one part, showcasing what you can offer is another. What if you have all the required skills but nobody looking for the skill-set is aware that you do. Having a credible portfolio is an effective way to showcase your skill-set and talent.



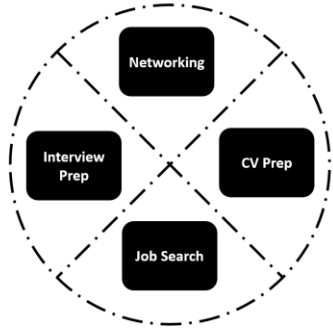
Building your Portfolio
DS/AI: Self-Starter Kit

After going through this chapter you will get to know what is needed to build an impressive portfolio even before entering the market looking for a relevant job.

1.5 Networking & landing the job

You know, you have filtered the best-suited role & honed your skill-set & built the portfolio as well. Your mission is not accomplished unless you

have like-minded professionals in your network who are aware of your capabilities and can refer you for the jobs that match your skills. Interview preparation is another task in itself.

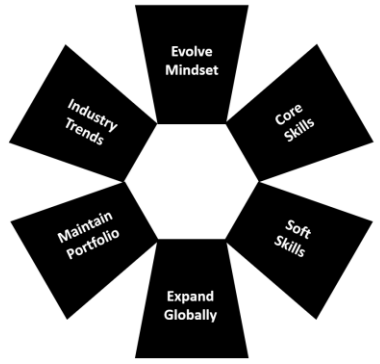


Networking & Landing the Job
DS/AI: Self-Starter Kit

This chapter will focus on the steps required to network & land the job in DS/AI field. How to network with like-minded professionals, how to search for relevant job openings, how to prepare & crack DS/AI interviews.

1.6 Making Career Future-Proof

Technology disruption & DS/AI evolution is changing the rule of the game over time. So rather than waiting for someone or technology to replace your labour, you'll take a proactive approach to put yourself in a position where potential employers can't afford to work without you.



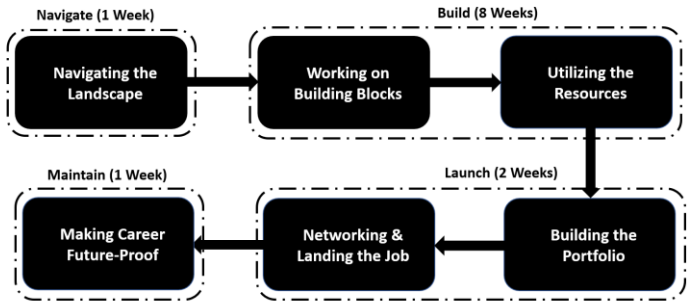
Making Career Future-Proof

DS/AI: Self-Starter Kit

Future proofing your career is simply taking the extra steps to prepare yourself for constant technology disruption, one that's going to rely heavily on adaptability.

1.7 Putting it all together

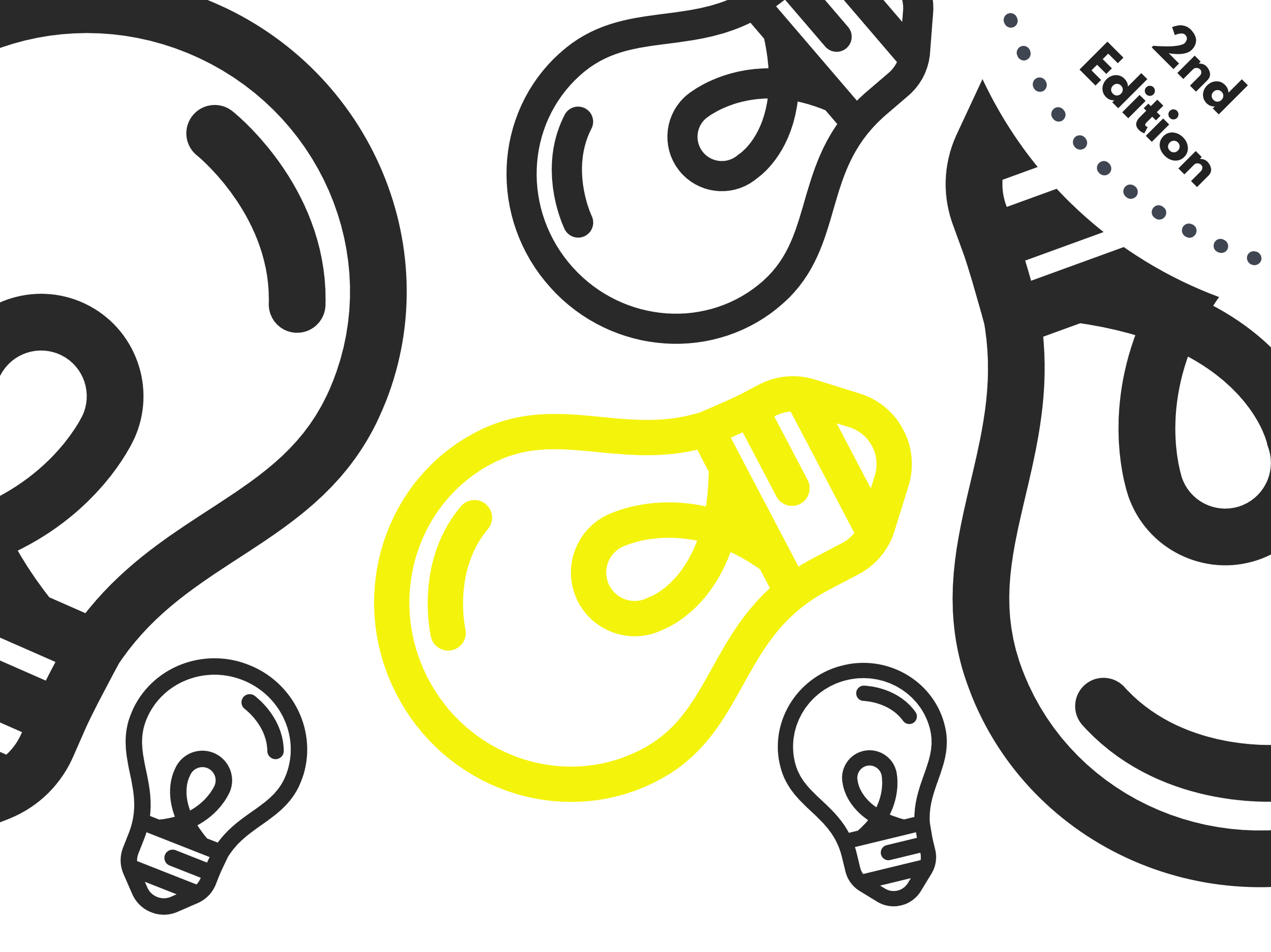
Like in the current chapter, before diving into the details, you are looking at the big picture of what is be covered in this book and how that fits into your learning curve as a DS/AI starter/enthusiast.



Putting it All Together

DS/AI: Self-Starter Kit

Similarly, after going through each step in detail in upcoming chapters, this chapter will revisit the high-level steps once again so that we can make sure that you have covered what we needed to.



Artificial Intelligence

Self-Starter Handbook

BUILD YOUR OWN ROADMAP

Ankit Rathi

Coming Soon… 2nd Edition

with revised content & 3 more chapters…

ankitrathi.com

From a time around when AI field started picking up, every other day I get many questions from AI starters & enthusiasts on ‘How can I get into AI field?’. Over a while, I have improvised my response based on the follow-up questions they ask like:

- What is AI and why is it important?
- What is the difference between AI, ML, DL, DS, DM, BI?
- What an end-to-end AI project looks like?
- What are the roles in AI projects, who does what?
- What AI concepts & tools you need to learn?
- Which books, courses, channels etc you need to refer to?
- How to practice & build an AI portfolio?
- How to write a resume for an AI role?
- How to build a helpful network?
- How to search for the job?
- How to prepare for the interview?
- How to switch into an AI role (inside or outside)?
- How to lead an AI initiative in your organization?
- How to stay up-to-date in this ever-evolving field?

You can notice that these questions are not conceptual ones and there is no dedicated material to address these roadblocks. I thought why not to build a framework or a road-map for AI starters and enthusiasts so that I need not answer the same type of questions again and again. And that is when I started documenting what a starter or enthusiast need to do step by step in order to reach a level when he is ready to tackle any challenge thrown to him. My answer to the above questions in a structured way to help AI starters & enthusiasts is this book. This book covers the framework to launch your AI career in 11 chapters.

Ankit Rathi is a data & AI architect, published author & well-known speaker. His interest lies primarily in building end to end AI applications/products following best practices of Data Engineering and Architecture.

In his free time, he blogs about various topics on Data & AI field & tries to simplify it for starters & enthusiasts.

ankitrathi.com

₹ 499 | $ 9.99 | € 8.99

ISBN 978-1-64587-432-4