

# Key Waypoints to Machine Learning Information Infrastructure

Rumor has it that machine learning and artificial intelligence will save us all... But it's not that simple. The data science world has been brewing for 60 years - is your information infrastructure up to the task?

Don't believe the hype - data insights are ripe for the taking, but you need a plan, skills, and an infrastructure that won't crumble under your ambitions.

## Key Terms

### Machine Learning (ML):

- ▶ Algorithms that improve automatically through exposure to large datasets.

### Transfer learning:

- ▶ Abstraction algorithms that identify knowledge that's "transferable" (reusable) from a source domain to a target domain.

### Pre-trained models:

- ▶ Saved network trained on a large dataset and used "as is" or with transfer learning to customize the model to a specific task.



### Your data is 🔥! But be sure to Ready and Aim first!

(LEAP TO CHAPTER 1)

- ▶ Running too far down the path of ML without a data strategy is going to bite you in the buttocks - data lifecycle management doesn't happen on its own.
- ▶ Data, data everywhere... multiplying like rabbits in infinite hats. It's on-premises, at the edge, in the cloud, with your partners, generated by your customers. Pick a path and start experimenting.



### Data science seems brand new, but being "data-driven" is decades old—how up to speed is YOUR organization?

(LEAP TO CHAPTER 2)

- ▶ ML eats data for breakfast... and lunch... and... all the time. What are you feeding it? For fast-moving analysis, tackle big data problems like volume, variety, velocity, veracity, and value.
- ▶ Automated decision-making (robot monkeys?) seems like the nirvana we've all been waiting for, but don't underestimate the power of hybrid human-machine decision making. Give your people data superpowers!



### Ain't no data like bad data and bad processes

(LEAP TO CHAPTER 3)

- ▶ The magic of joins - no piece of data stands alone, so smart apes smash together different types of data for better predictions. Many datasets, not just one!
- ▶ Use cases your data was designed for in the past may be missing values, have bad data quality, or lack standardized formatting. That makes modern day analytics and ML fall down without cleanup work.



### The guts and gore of ML success

(LEAP TO MIDDLE OF CHAPTER 3)

- ▶ Monkey see, monkey do, monkey keep doing - you need repeatable ML pipelines unless you like ripping your hair out repeatedly.
- ▶ Stand on the shoulders of pre-trained models - you don't have to rediscover everything yourself. Especially for expensive models like language and vision processing.



### There's more to data than the cloud

(LEAP TO END OF CHAPTER 3)

- ▶ No need to throw away existing infrastructure. Leverage it for a hybrid computing approach. Cloud + on-premises provides flexibility for scale, with guaranteed resources that are all yours.
- ▶ Cutting edge storage + cutting edge ML = full speed ahead! Don't get so focused on using the latest algorithms and fancy tuning techniques that you leave out the fundamentals. The future isn't plastics, it's NVMe.

## Download the Full Gorilla Guide!

By the time you've finished this Gorilla Guide, you'll have a solid grasp of machine learning fundamentals, and (hopefully) won't be intimidated by what can feel like very esoteric material!

### In this Guide

- ▶ Learn How To Define a Data Strategy
- ▶ Improve Operations By Designing a Data-Centric Infrastructure
- ▶ Get Tips for Extracting Timely Business Insights

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