Introduction
Machine Learning Algorithms

Logistic Regression — Video

A/B Testing? — Video

Decision Tree — Post

SVM—Post

How SVM—Video

Principal Component Analysis: PCA—post

Principal Component Analysis—Video

Adaboost — Post

AdaBoost — Video

A Gentle Introduction to the Gradient Boosting Algorithm for Machine Learning—Post

Gradient Boost Part 1: Regression Main Ideas—Video

K-Means Clustering—The Math of Intelligence — Video

Bayesian Network — Post

Neural Network — Post

Dimensionality reduction algorithms — Post

How kNN algorithm works — Video

Probability And Statistics

A common question you might get at FAANG companies and other tech companies alike is the occasional probability or statistics question. The questions won't necessarily require complex math. However, if you haven't thought about independent and dependent probabilities in while. It is good to review setting up the basic formulas.

Probability Videos

Dependent probability introduction

Independent & dependent probability

Probability Quiz
Probability Interview Questions
A die is rolled twice. What is the probability of showing a 3 on the first roll and an odd number on the second roll?
In any 15-minute interval, there is a 20% probability that you will see at least one shooting star. What is the probability that you see at least one shooting star in the period of an hour?
Alice has 2 kids and one of them is a girl. What is the probability that the other child is also a girl? You can assume that there are an equal number of males and females in the world.
How many ways can you split 12 people into 3 teams of 4?
Statistics Pre-Quizzes
Statistics is a broad concept so don't get too bogged down in the details of each of these videos. Instead, just make sure you can explain each of these concepts at the surface level.
Statistics Concepts

Product And Experiment Designs

Product sense is an important skill for data scientists. Knowing what to measure on new products and why can help determine whether a product is doing well or not. The funny thing is, sometimes metrics going the way you want them to might not always be good. Sometimes the reason people are spending more time on your website is because webpages might be taking longer to load or other similar problems. This is why metrics are tricky and what you measure is important.

Product And Experiment Design Concepts

User Engagement Metrics

Data Scientist's Toolbox: Experimental Design -Video

A/B Testing Guide

6 Themes Of Metrics

Product And Metrics Questions

An important metric goes down, how would you dig into the causes?

What metrics would you use to quantify the success of youtube ads (this could also be extended to other products like Snapchat filters, twitter live-streaming, fort-nite new features, etc)

How do you measure the success or failure of a product/product feature

Google has released a new version of their search algorithm, for which they used A/B testing. During the testing process, engineers realized that the new algorithm was not implemented correctly and returned less relevant results. Two things happened during testing:

People in the treatment group performed more queries than the control group.

Advertising revenue was higher in the treatment group as well.

What may be the cause of people in the treatment group performing more searches than the control group? There are different possible answers here.

Question 4 borrowed from Zarantech

Programming

Just because data science doesn't always require heavy programming, it doesn't mean that interviewers won't ask you traverse a binary tree. So make sure you ask your interviewer what to expect. Don't be daunted by these questions. Pick a few to do just so you're not surprised in an interview.

Pre-Video Questions

Fizz Buzz

Find The Kth Smallest/Largest Integer In An Array

Nth Fibonacci

Algorithms And Data Structures

Pre-Study Problems

Before going through the video content about data structures and algorithms. Consider trying out these problems below. See if you can answer them. This will help you know what to focus on.

985. Sum of Even Numbers After Queries

657. Robot Return to Origin

961. N-Repeated Element in Size 2N Array

110. Balanced Binary Tree

Algorithms And Data Structures Videos

Data Structures

Data Structures & Algorithms #1—What Are Data Structures?

Multi-dim (video)

Data Structures: Linked Lists

Core Linked Lists Vs Arrays (video)

Data Structures: Trees

Data Structures: Heaps

Data Structures: Hash Tables

Data Structures: Stacks and Queues
Algorithms
Python Algorithms for Interviews
Algorithms: Graph Search, DFS and BFS
BFS(breadth-first search) and DFS(depth-first search) (video)
Algorithms: Binary Search
Binary Search Tree Review (video)
Algorithms: Recursion
Algorithms: Bubble Sort
Algorithms: Merge Sort
Algorithms: Quicksort
String Manipulation
Coding Interview Question and Answer: Longest Consecutive Characters
Sedgewick—Substring Search (videos)
SQL
SQL — Problems
262. Trips and Users
601. Human Traffic of Stadium
185. Department Top Three Salaries
626. Exchange Seats
Hackerrank The Report
177. Nth Highest Salary
Symmetric Pairs

Occupations
Placements
Ollivander's Inventory
SQL — Videos
IQ15: 6 SQL Query Interview Questions
Learning about ROW_NUMBER and Analytic Functions
Advanced Implementation Of Analytic Functions
Advanced Implementation Of Analytic Functions Part 2
Wise Owl SQL Videos
Post SQL Problems
Binary Tree Nodes
Weather Observation Station 18
Challenges
Print Prime Numbers
595. Big Countries
626. Exchange Seats
SQL Interview Questions: 3 Tech Screening Exercises (For Data Analysts)
Data Science Interview Courses
If you have finished all of the questions and videos above and still feel like you need to review, then consider taking the courses below. They will help you get some new perspective. The truth is, these courses will pretty much cover the same concepts covered in the videos we have provided. However, sometimes, hearing the same information from multiple sources is helpful.
Data Science Career Guide - Interview Preparation
The Coding Interview Bootcamp: Algorithms + Data Structures

Data Warehouse Concepts: Basic to Advanced concepts
Good Luck With Your Studies!
Some Other Great Resources!
142 Resources for Mastering Coding Interviews
Learning Data Science: Our Top 25 Data Science Courses
The Best And Only Python Tutorial You Will Ever Need To Watch
Dynamically Bulk Inserting CSV Data Into A SQL Server
4 Must Have Skills For Data Scientists
Engineering Dashboards, Metrics And Algorithms Part 2
Read Last Weeks Top Ten Article For Python Libraries
How Algorithms Can Become Unethical and Biased
SQL Best Practices—Designing An ETL Video