Preparing for the Technical Interview

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Outline

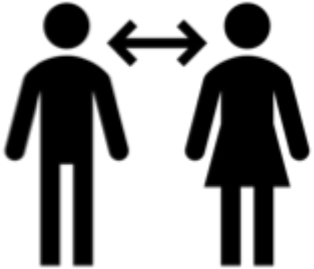
1. What is data science?
2. What types of data science are there?
3. What subject matter topics do I need to know?
4. What will my interview look like?
5. How do I prepare?

What is data science?

Data science is a buzzword

- “Data science” can mean very different things to different people

- **Analogy**: cognitive neuroscience and therapy are both types of psychology



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- Job descriptions will give you some indication of the ‘flavor’ of data scientist, but sometimes you’ll learn what the company needs as you’re going through the interview process

Data science is a buzzword

The GOOD thing is that you do not need to know every topic from every data science flavor to do well in your interviews

What types of data science are there?

Data Engineering	Computer Vision	Data Product
Software Engineering	Genomics & Computational Biology	Decision Science
Computer Science	Human Factors Engineering	Business Intelligence
Machine Learning Research	Speech Processing & Audio Engineering	User Experience & Customer Insights
Machine Learning Engineering	Natural Language Processing (NLP)	Market Research

What subject matter topics do I need to know?

Machine Learning

- Supervised & Unsupervised Learning
- L1 vs. L2 regularization
- Sensitivity, Specificity, F1
- PCA, t-SNE, UMAP
- Random Forest vs. XGBoost vs. Catboost

Statistics & Probability

- Normal vs. Binomial vs. Poisson vs. Bernoulli distributions
- KL Divergence
- Q-Q plot
- OLS & ML Regression
- Power Analysis

Computer Science

- List comprehension
- Python environments (virtualenv, pip, conda)
- Arrays vs. Hashmaps vs. Queues vs. Linked Lists
- Time & Space Complexity / Big-O Notation
- Industry Terms / Services (AWS, GCP, Azure, Tableau, Power BI, Agile)

SQL

- WHERE
- DISTINCT
- LEFT, RIGHT, FULL OUTER, INNER JOIN
- SELECT
- COUNT

Business

- KPIs
- Churn
- LTV
- Funnel Analysis
- A/B Testing vs. Multi-armed Bandits

What will my interview look like?

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- Different companies use different combinations of interview formats

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Hint: You can use your Erdős project!

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It helps to practice this, with other people, out loud, over a few weeks

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Your Erdős project will be a close simulation to a Data Challenge (except you won't choose the prompt or data!)

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Practicing with each other is the best way to prepare

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Reading published case studies and taking notes helps!

How do I prepare?

Preparation Tips

- Practice, practice, practice -- out loud and with others (not just silent reading by yourself!)
- Use our **tech interview materials on the Erdős website**
- Sign up for **practice groups**

Ace the Data Science Interview

DataLemur

Sign

Ace The SQL Interview

Practice SQL Interview questions asked by top tech companies **FOR FREE** on DataLemur. Made by Nick Singh, Best-Selling Author of Ace the Data Science Interview

COMPANY	TITLE	DIFFICULTY
LinkedIn	Data Science Skills	Easy
Facebook	Page With No Likes	Easy

Homework for this month

- Research the different types of data science jobs and figure out which type(s) best align with your interests, values, and career goals

- Go through tech interview folder and start prepping (yourself and with others)

Coming up next month

- White boarding & paired coding prep overview (with me)
- Dedicated group sessions for white boarding & paired coding
- Weekly problem sets starting after the next lecture

Contact me on our Slack channel :)