



# A Career in Industry: Climate Risk Modeling

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# AGENDA

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**01**

**Who am I and what do I do?**

**07**

**How did I get here?**

**09**

**Choosing a career trajectory**

**11**

**Landing a job**





# WHO AM I?

## A LITTLE BIT ABOUT ELEANOR

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Hi! I'm a Manager on PricewaterhouseCoopers (PwC)'s Climate Risk Modeling team.

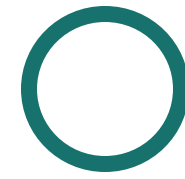
For work, I love working with people, on Earth's most pressing problems, and I love working with climate-related data.

In my spare time, I am an adjunct lecturer for an introductory Climate Science course. I love cooking, going to concerts, spending time with my partner and my fluffy dog.

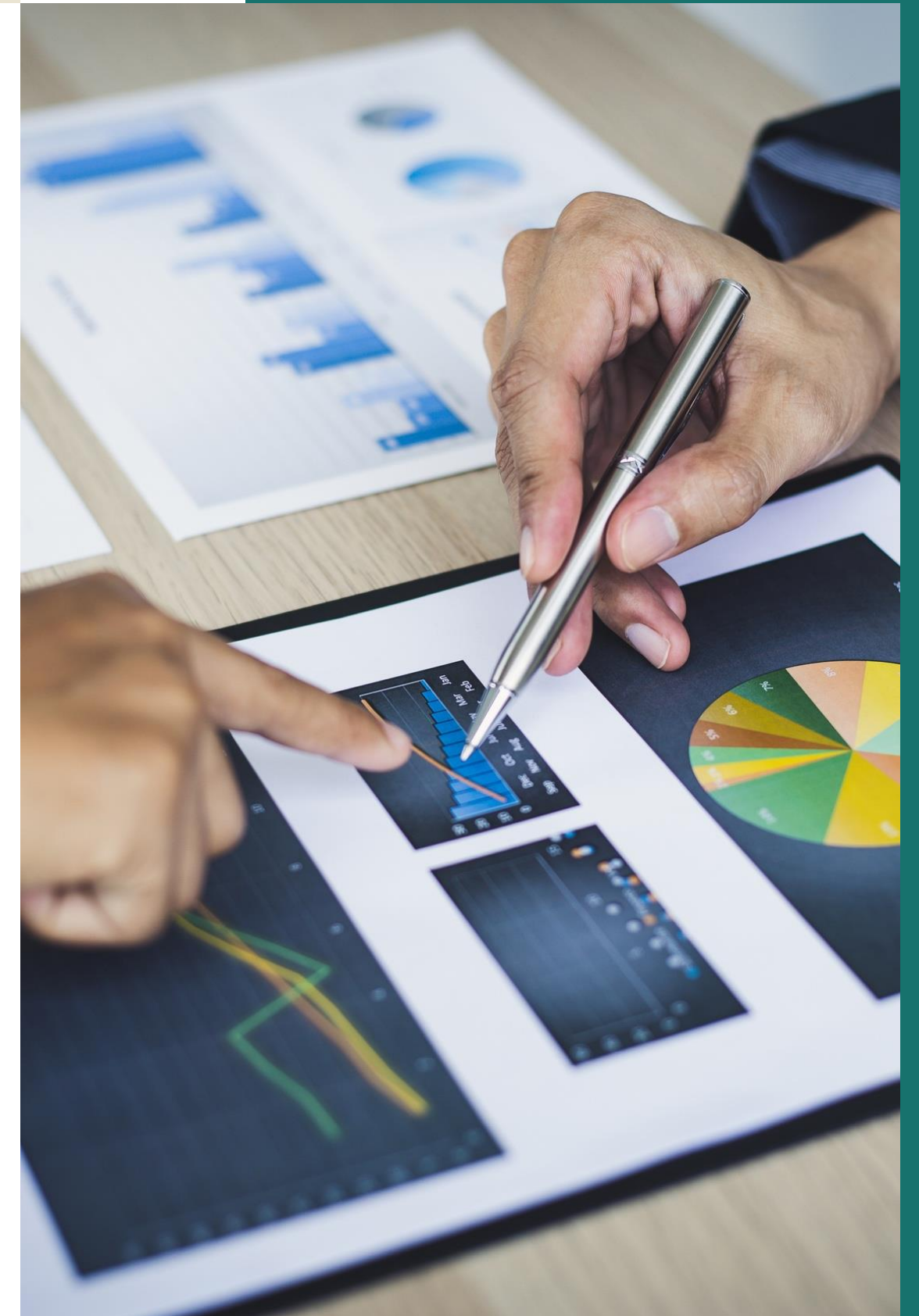


# WHAT IS PWC?

## AND WHAT DO I DO, SPECIFICALLY?



- PwC is a global consulting firm whose primary clients are Fortune500 companies. They specialize in audit and tax services and are driven by government regulation.
- The [Climate Risk Modeling](#) team helps companies assess and disclose their climate risk in response to climate risk disclosure requirements, like that required by TCFD, CSRD, SEC, ISSB, etc.
- As Manager, I oversee projects that involve quantifying client's exposure to Physical and Transition risk. I lead client engagements, model development projects, and keep track of budgets.



# CLIENTS & MODELING

**HELP COMPANIES IDENTIFY AND PREPARE FOR CHANGING WEATHER & CLIMATE POLICY**

## CLIENT ENGAGEMENT

I lead meetings with clients, interview them about their operations and governance, and learn about where their greatest potential exposures lie. Then using [tools developed in-house](#), our team quantifies their Physical and Transition risk exposure of their assets and operations. We may also help them craft their report for disclosure requirements.

## MODEL DEVELOPMENT

I lead development of both generalized and bespoke Physical Risk modeling efforts. This involves everything from data collection – from confidential client data to publicly-available data, to data processing, to analysis / model-building, to delivering results in slides or other media. As a Manager, I can also delegate these tasks to others and monitor their progress.



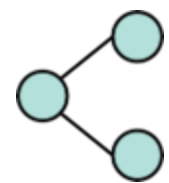
# DAY-TO-DAY

## EVERY DAY IS DIFFERENT



### Meetings

Helping clients identify and prepare for climate change are complex problems that require teamwork. I regularly meet with business leaders, sustainability teams, and internal team members to plan, check-in, & strategize.



### Planning and presenting

As manager, I must keep tabs on projects' progress. This involves many administrative tasks, like timelines and budgets.

Effective communication is key when working with clients. I spend a lot of time making & giving presentations.



### Coding

Data is the name of the game. To build models, I am constantly processing, combining, and analyzing data, such as that from climate models & IAMs, satellite data, reanalysis, population projections, or data from the client themselves.

# MY CAREER PATH

## A VARIETY OF EXPERIENCES LED ME HERE

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01

### Academia (~7 years)

I developed a strong mathematical background with a B.S. in Applied Mathematics. I became an expert in climate modeling and data analysis with a Ph.D. Then I became an independent researcher as a postdoc.

02

### Became a data scientist in industry (~1 year)

I transitioned into industry as a “pure” data scientist. Here, I learned Machine Learning (ML) techniques, worked with a wider variety of data, and learned the ropes of working at a company.

03

### Moved into climate risk tech (~2 years)

With my newly acquired data science skills, I joined a climate risk startup, where I applied ML techniques to represent climate perils efficiently with climate model output. I started leading small teams.

04

### And now, I’m at PwC (2 years)

# PROJECT EXAMPLES

## FROM ACROSS MY THREE POSITIONS SO FAR

Transamerica (Data Science)	Jupiter Intelligence (Data Science)	PricewaterhouseCoopers (Climate Risk Consultant)
<ul style="list-style-type: none"><li>Designed and implemented software to monitor the performance of an ML model that predicts employee turnover</li></ul>	<ul style="list-style-type: none"><li>Contributed to an internal software repository that fits statistical distributions in order to estimate extremes of any geophysical variable</li></ul>	<ul style="list-style-type: none"><li>Led the design and development of a global representation of future heatwaves risk that can be used for multiple clients</li></ul>
<ul style="list-style-type: none"><li>Built an ML model to detect cases of health insurance fraud</li></ul>	<ul style="list-style-type: none"><li>Characterized flood model output &amp; building a statistical model emulator using enormous datasets to the team from having to run an extreme expensive physical model</li></ul>	<ul style="list-style-type: none"><li>Engage with a client's science and procurement team to conduct deep-dive analysis of the future impact of climate change on a specific agricultural commodity.</li></ul>
<ul style="list-style-type: none"><li>Designed &amp; calculated new key performance indicators (KPIs) to monitor sales agents' performance &amp; behavior</li></ul>	<ul style="list-style-type: none"><li>Designed and wrote a package that intelligently combines projected climate risk metrics from a wide variety of climate models</li></ul>	<ul style="list-style-type: none"><li>Led the Physical Risk team in a multinational effort to conduct a global analysis of top-tier risks to businesses, including climate change impact to global energy, business, and agriculture</li></ul>



# THE CLIMATE RISK INDUSTRY

## WHAT COULD YOU DO?



### Consulting

Like PwC, many organizations exist to help businesses with climate change. Some work with specific clients, like farmers or utility companies.

### Tech

Both small startups and huge companies employ climate scientists. Small startups produce products for niche purposes, like pricing insurance or flood risk to real estate. Big companies have in-house teams to achieve sustainability goals or even produce their own climate models.

### Insurance, Finance, or other

Some companies hire climate scientists to price insurance products with catastrophe modeling. Investment banks are creating climate risk teams due to their investment risk. Even oil companies need a climate expert in-house.

# FINDING YOUR NICHE

LOOK INSIDE BEFORE YOU LOOK ELSEWHERE



## What are you good at?

Take note of all the things you currently do, both during and outside of work. What parts of it do you feel like you **achieve with ease**? What are things for which you've **received compliments**?

## What are the things that you enjoy?

Is there anything at work (or at home) that makes you accidentally skip a meal? Or is there something that you get so wrapped up in, that you **have a craving to work towards it** when you must take a break?

## Can you make a good living? Both financially and mentally

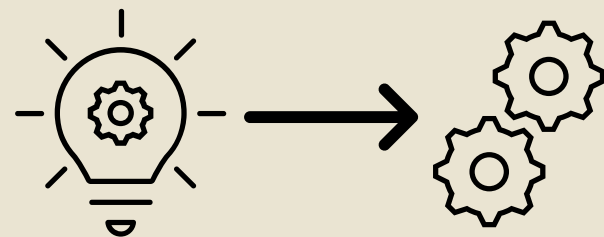
If we could get paid to do our hobbies, we would. But of the things listed above, what can you get paid to do? Would the **work-life balance be sustainable** for you? Would you feel **proud** doing that work?

# HOW DO I LAND A JOB IN INDUSTRY?

THERE ARE THREE THINGS YOU NEED BEFORE YOU LAND YOUR FIRST GIG

## A PROJECT

*Accessible & clear*



A standalone example of independent work you've conducted from start to finish.

Outstanding examples will allow the interview to interact with it

## A RESUME

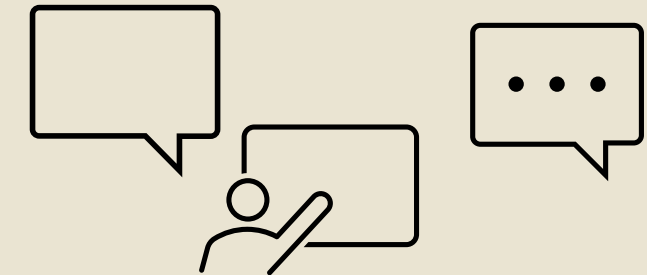
*Matching the job's desired skillset*



This is where you should stand out & seek review from others. Recruiting & hiring teams will look at hundreds for competitive positions.

## AN INTERVIEW

*Well-practiced*



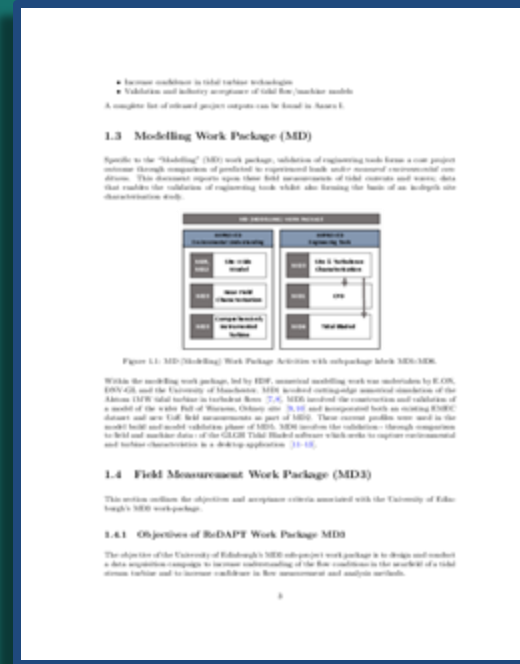
It's obvious when candidates are unprepared. This is your chance to show what it would be like to work with you, live.

# #1 A PROJECT EXAMPLE

WHERE YOU'VE FOUND THE ANSWER TO A REALLY HARD, RELEVANT PROBLEM

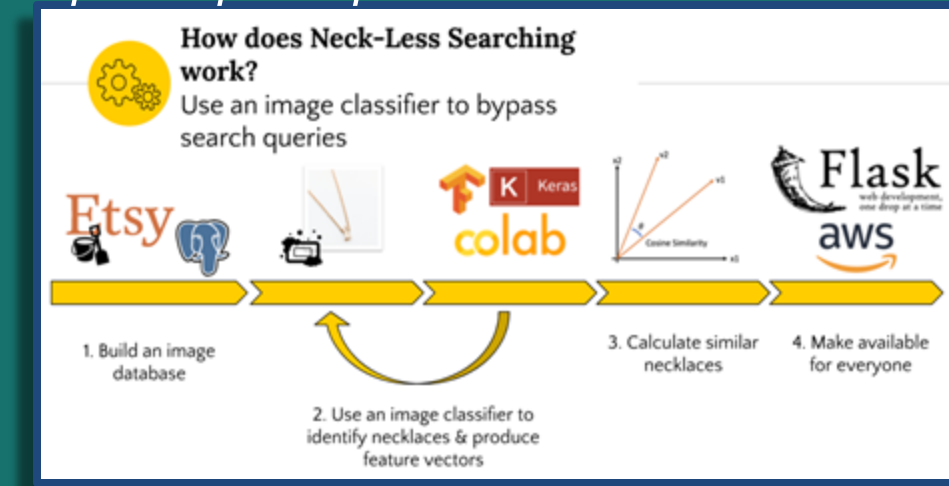
This project should follow a few criteria:

- It should be relevant to the position in some way – either via the tools used (coding languages, datasets, methods, ML), or because the answer or solution you found is directly related to the position.
- You should be able to explain *concisely* (<3 mins) the importance of the problem, what you did, and your solution.
- You should enable the hiring team to engage with your project on their own time. Even if it's a published paper, make it more digestible for the non-academics.

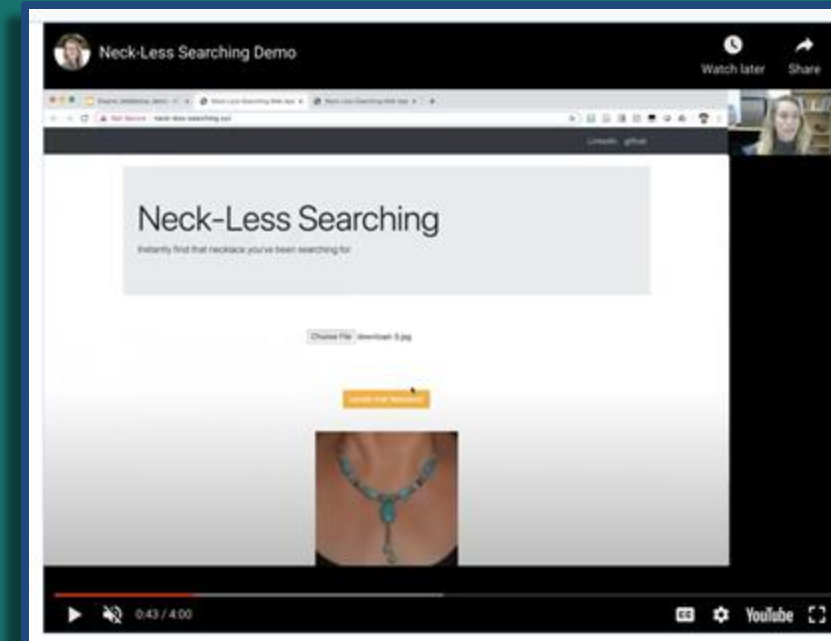
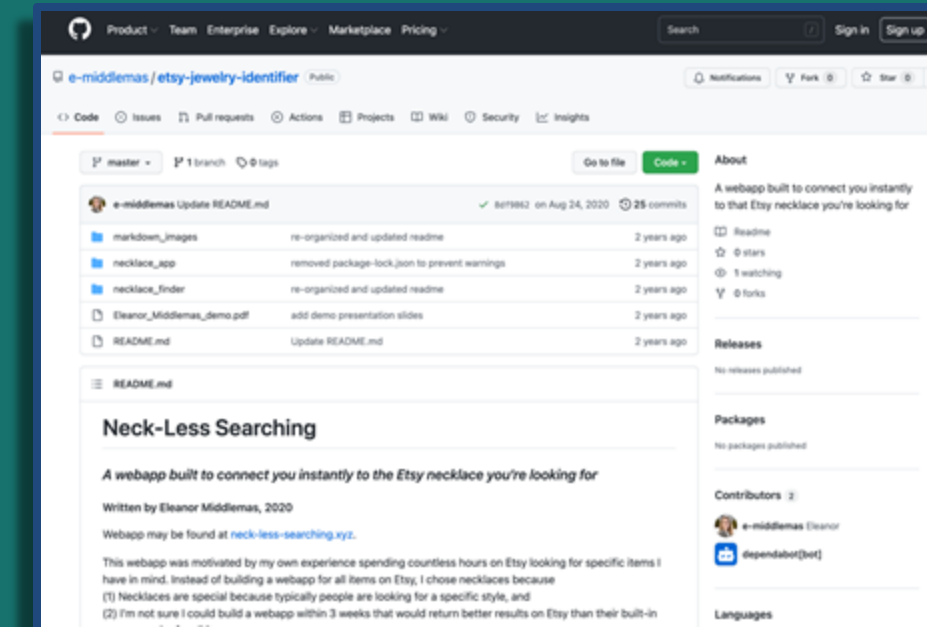


A concise write up/report with minimal lingo visualizations

A powerpoint presentation

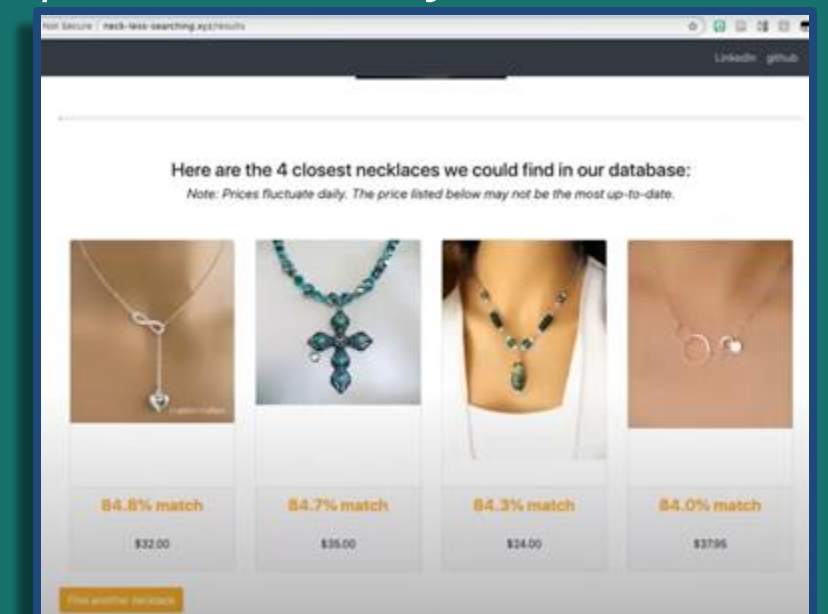


A Github repo with a detailed README



A ~5-min YouTube video of you explaining your work

A WebApp where the user can make predictions with your model



# #2 A RESUME

GET AS MANY EYES ON IT AS YOU CAN – ESPECIALLY FROM THOSE IN THE FIELD YOU’RE PURSUING

Have section describing the skills and tools that you use that are relevant to the position you’re interested.

**Borrow language from the job description(!)**

**Your resume should read as though you are already in that position that you’re applying for.**

- Only highlight elements from your past experiences – or reframe them – so that they’re relevant to the position you’re pursuing.
- Have existing industry friends review your resume – especially if they hold a position similar to the one you’re pursuing

**When describing your projects, make sure you hit these points in as little words as possible!**

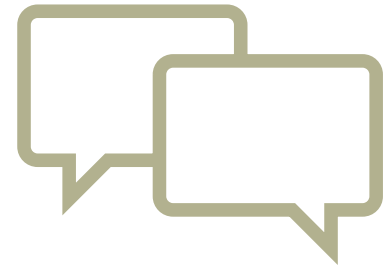
- Why is this project important?
- What did you use? And if you’re apply to a tech role, what was its size?
- For tech roles: what statistical tools, ML, or languages did you use?
- What was the **measurable** outcome?
- Did you work on or lead a team? If so, what size?
- **AVOID JARGON FROM YOUR EXPERIMENTS.** If your friend outside of academia can’t understand it, neither will the recruiter or interviewer. Limit your jargon to that used in the job description
- Example: *“Assessed the impacts of climate change on observed hurricane intensity through Total-Least-Squares regression applied to 38G of climate model and observational data. Found that climate change has a small influence on hurricane intensity with an  $R^2 = 0.84$ ”*

Put your education towards the bottom of your resume.

Unless you’re pursuing a position where you’ll be securing grants, giving conference presentations, or publishing research papers, leave those experiences **out**.

# # 3 INTERVIEW SKILLS

**DON'T RAMBLE. AND REMEMBER, INTERVIEWING IS A 2-WAY STREET!**



## Practice, Practice, Practice

- Look up potential interview questions for your position online. Practice answering them **concisely**
- Practicing talking about your experiences, making sure you're hitting the right points.
- A common mistake is that interviewees get carried away & don't answer the question asked.



## Review basic concepts

- Depending on the position, you may need to review some basic concepts. For a data science role, you may want to review basic Machine Learning concepts.
- It's okay to say "I don't know!" & instead logic through it with the interviewer.
- For a consulting role, you may want to review business concepts.
- **Do your research on the company & role** to determine what you should study before hand.



## Make a list of your questions

- Reflect on things you didn't like at your current position. Ask questions to make sure you won't find it at this position.
- Try to get a sense of what your day-to-day will look like. If you're unclear, ask!
- Don't be afraid to ask about the culture. How are conflicts handled? How much vacation do employees take? What is the path to promotion?



# THANK YOU

● FOR YOUR ATTENTION

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