

From academia to industry

Learnings from my journey

My journey

From Physics to Data Science and Engineering



- Work on rare B decays + computing
- Convener of small subgroup
- Convener of large physics WG

2007-2012
PhD@UB

2012-2016
Postdoc@EPFL

2016-2019
SNF Ambizione@UZH

2019-
Data@Proton

Proton

- Hired to build data department from scratch, including on-premise data platform (no cloud due to privacy)
- Grow team from 2 to 17, with Data Scientists, Engineers and Operations
- Bring data-driven decision making across the whole organization, large impact starting from nothing

What do I do now?

Data platform for privacy

- Grow the team to support the company's needs
 - Hire new engineers and scientists, build the second line of managers
 - Add processes, tweak, strong-arm, streamline, to make sure that the team can do their very best at all times
 - Bureaucracy
- Work with company leadership to maximize impact
- Code and build things from time to time

How did I get here?

Dumb luck and the value of being first

- Extreme case: from academia to “leadership” in one step
- Once in the position, was given freedom to do what I thought best, and it worked out
 - Environment a key point for success (physics start-up mentality)
- Lots of mistakes in making the transition: bad preparation, too much confidence, wrong attitude
- A bit of good judgment here and there too

**What matters (and doesn't) when transitioning
from academia to industry (data)?**

Why should you listen to me?

Or how I learned my lessons

- Did IC work as data scientist, data engineer, and data operations
- As team leader, built a small department and managed relationships with “customers”
 - Designed several hiring pipelines, run about 100 candidates through the full pipeline, reviewed 2000+ CVs
 - Hired 17+ people for my team, know their stories too
- More than 200+ final interviews, from Junior to C-suite

Ready?

**Why do you want to leave academia?
Why do you want to go to the data field?**

Do you have what employers are looking for?

How can you be useful, imposter syndrome and all that

- Analytic skills, problem-solving, independence, decent-to-great CS skills
- Fight against imposter syndrome
 - Prepare, prepare, prepare
- Beware of hubris
 - Skills are there, but you are an unknown quantity, therefore a risk
 - Humility will take you very far

Which companies to apply for?

Research and networking

- Research (LinkedIn, Google) based on the answers to questions such as
 - Are you interested in any particular industry? Any particular mission or type of company? Any company that you admire?
 - What type of environment would you thrive in? Start-up vs corporate
- Check/contact people you know (many ex-CERN in industry!)
 - A contact in a company will get you past the first screening
- Try to contact people on LinkedIn and find out more about those companies

Which jobs to apply for?

Know thyself

- Think of the type of work you'd like to do
 - CERN scientists are excellent generalists
 - Specialized careers (ML engineering, data engineering) require special skills, so be honest
- It's OK to not fulfill all the requirements for the job, but be honest!
- Lead/senior positions are challenging, even if you have a very long experience in academia
- Consider “stepping stones” in job type and seniority, gaining experience is important

How to prepare for the transition?

Things to learn, things not to learn

- CERN people tend to focus on learning very technical aspects
 - Data science: Python/R, data cleaning, SQL, visualization tool (Tableau, PowerBI)
 - ML, deep learning, etc, only for ML engineers. For DS, you just need to be able to explain some of your projects.
- Business concepts are key: learn the basic concepts surrounding the industry you're interested in, the vocabulary, etc
 - Blogs, newsletters (Substack), LinkedIn “influencers”, Twitter (not anymore?)
 - Study theory (in some industries)

How to get interviewed?

Standing above the crowd

- Short skills-based CV
 - Simplify, nobody cares about your scientific achievements
 - Share skills, connect the work you've done with industry concepts
 - Tell a story
 - Have a non-scientist proof-read your CV for jargon and complexity
- HR interviews are mostly used to assess team/company fit
 - Research the company, show interest, don't oversell
 - Ask questions!

How to maximize your chances?

Interviewing for success

- Research the industry and position, understand the business concepts and be comfortable using them.
- If there are some specific technical elements that you don't know, study them.
- Focus on simple communication, thought process,
- Find parallels in your work, show you can transport your academia experience quickly (you're a fast learner)
- Ask questions, show interest but don't fake it
- Don't take it personally if it doesn't work out

What differences can you expect?

Academia vs industry

- Data is never clean, the smaller the company the worse it is. Data exploration and cleaning skills are very important at the beginning.
- Iteration speed is usually much faster in industry
 - Perfect is the enemy of good enough
 - Think about the ROI (30k\$ vs 3\$ questions), scale matters
- Impact of your work is very clear (the smaller the clearer it is)
- Coordination with non-technical stakeholders, communicate and simplify concepts to obtain buy-in

What to take home from today?

Key learnings

- Be confident, you're good (the hard part is getting the job)
- But not THAT good
- Prepare, work hard, be curious
- Play the long game, take time to learn and discover what you like and are good at
- Be mentally ready for rejection

Get in touch

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