Outside Academia

Summary of the conversations

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General information

Form for questions:
https://docs.google.com/forms/d/e/1FAIpQLScMvko-e6kEkPvnvGHDY3yrmrP5zT6V9VsvtJUkuBRj_ctr8g/viewform?usp=sf_link

Nick Hand (Sep 16, 2020)

Contributors:

https://musa-550-fall-2020.github.io/
https://github.com/MUSA-620-Fall-2019

Reinabelle Reyes (Sep 2, 2020)

Recording:
https://drive.google.com/file/d/1cwij_Q1DKLda8CNFP1oJE-Xd-5uNFCBy/view?usp=sharing

Spent some time in industry, but currently in a tenure-track position in Manila and a senior role in a data science/business intelligence consulting firm.

- Currently part-time faculty, part-time industry
- Before, was full-time industry for 6 years, heading an analytics team in a large conglomerate in the Philippines

How was the transition back into academia?

- Fortunate because not many physics PhDs in the Philippines
- Still continued to maintain some link to academia even while in industry, published a small paper.
- Many similarities between academia and industry, thinks of her group as a startup.
    - Has two tracks for her students, one focusing on astronomy and the other on data science
- But in academia, no real bosses/stakeholders in the same way as an industry.

How did you get into data science?

- Analyzed data from Sloan while doing her PhD, but mostly in IDL. Had to learn Python and R, picking up tools along the way.
- But most important was to learn the business domain.
- Initially, went back to Manila to teach, but managed to get a deal to teach and work in industry part-time.
- Getting a PhD helps give you the confidence of being able to learn any new domain easily. As a consultant, work is very collaborative, and it's easy to find someone to teach you.

How did you decide to change jobs?

- Just based on opportunity, but also something missing from the previous job (e.g. freedom to do interviews, etc.)

Why did you decide to move back into academia?

- Initially, didn't work in academia because it doesn't pay well in the Philippines, so worked in industry to earn some money and build a network. This allowed her to be able to work in consultancy on the side now, while finding fulfillment in academia.

How does the university see your part-time work in industry?

- Surprisingly, the university is very encouraging and has other high-profile professors who run companies
- Good to have collaboration/networking outside industry to serve as a bridge for students.
- Robert Lupton: Even at Princeton, can typically spend 10-15% of time doing outside work without running into trouble with the university (though this may include serving on NASA review panels, etc.)

Claire Lackner (Aug 19, 2020)

Zoom link: https://princeton.zoom.us/j/95979616906 (password: afterAcad)
Contributors:

Did the tools you learned to use in astronomy transfer over to industry?

- Astronomers know how to use messy data with nulls and large datasets
- AWS = just another form of distributed computing

Is computer science knowledge necessary?
- Good to know for interviews, easy to learn - don't have to be the world's expert.

How is the experience of the Insight Data Science program?
- 8-week Data Science bootcamp, 4 of those weeks are creating a project
- Time for interview prep (this is something you need to know).
- Help introduce you to companies
- Price now: $24k or 12% of your salary for 2 years - not sure if she would do it at this price (back then, it was a standard headhunter practice where company pays)
    - Patrick agrees.
- Most useful thing is that the program gives you a network and time/space to transition, but you may already have that.

Difference in startup vs large companies
- In a startup, your role may change a lot, wear many hats, but have a lot of say.
- Have to be comfortable with the possibility of

What is the coding interview like?
- Difficulty of coding interview for data science is lower (mostly SQL/Python).
- Need to prep for this.
    - Everybody asks a Bayes theorem question.
    - Read technical blogposts to be able to answer business problems.
    - Just like quals!
- At Netflix and most companies, don't hire straight out of academia/grad school, need experience.
- Google and FB have a separate interview track for people trying to make the transition out of academia.

What was the hardest part of the transition from academia to industry?
- Making the decision was hard, but she and most people are happy with the transition.
- It's nice to be able to change jobs/roles every few years without having to move.

Did doing a postdoc matter?
- Not sure if it had any weight on resume when applying to industry.
- May help you gain more experience organizing projects, etc. but not a big step-up for industry.
- Silicon valley has an age bias.
- You need to be able to tell a narrative about what you've done, why it's relevant, and what you want to do next.

What does the career trajectory of a data scientist look like?

- Most people start as individual contributors (ICs) before moving to people-management roles
- May also transition to decision-making roles/project management.

How did you construct a narrative from your academic experiences?

- Mix of technical skills plus your impact.
- E.g. you had this ambiguous problem, turned it into something that had an interesting answer, but highlighting the tools/skills you used along the way.
- They're also looking for people who are good at communicating too.
- Practice lots - know how to introduce yourself, know your audience, and changing your technical aspects to suit them.

Are Data Science masters programs useful?

- Don't bother, you already have all of these skills, and you can learn the bits you need to prep for interviews in 6-8 weeks.
- Maybe internships are more helpful.

Any advice for people who are on the fence?

- Don't let the change/activation energy freak you out