

Research Tools and Methods for the Mathematical Science

Lecture 9: Getting a job

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Intro

Proof by Postponement: "The proof for this is so long and arduous, so it is given in the appendix."

After years of relentless training, the student has finally reached a pinnacle of achievement in the discipline.

"Before granting the belt, you must pass one more test," says the sensei.

"I am ready," responds the student, expecting perhaps one final round of sparring.

"You must answer the essential question: What is the true meaning of the black belt?"

"The end of my journey," says the student. "A well-deserved reward for all my hard work."

The sensei waits for more. Clearly, he is not satisfied. Finally, the sensei speaks. "You are not yet ready for the black belt. Return in one year."

A year later, the student kneels again in front of the sensei.

"What is the true meaning of the black belt?" asks the sensei.

"A symbol of distinction and the highest achievement in our art," says the student.

The sensei says nothing for many minutes, waiting. Clearly, he is not satisfied. Finally, he speaks. "You are still not ready for the black belt. Return in one year."

A year later, the student kneels once again in front of the sensei. And again the sensei asks: "What is the true meaning of the black belt?"

"The black belt represents the beginning – the start of a never-ending journey of discipline, work, and the pursuit of an ever-higher standard," says the student.

"Yes. You are now ready to receive the black belt and begin your work."

"The Parable of the Black Belt," is excerpted from Built to Last: Successful Habits of Visionary Companies, by James C. Collins and Jerry I. Porras.

Getting a job

I'm not the most qualified person to talk about this: I got a few jobs, but who knows if I'll ever get another one? :)

I do, however, regularly interview applicants.

My main two thoughts

- Think strategically, and think early
 - ▶ what do you want to do?
 - ▶ what do you need to do get there?
- Dealing with applications processes
 - ▶ application letters and CVs
 - ▶ interviews

Pretty much same things apply when applying for a PhD

IT WOULD START WITH FIVE MINUTES
OF PEELING LINT FROM DRYER TRAPS
FOLLOWED BY AN HOUR OF PRESSING
A LIGHTSABER HANDLE AGAINST
THINGS AND SWITCHING IT ON.
THEN I'D RETIRE TO A LIFE OF LUXURY.



WHEN PEOPLE ASK ME TO DESCRIBE MY DREAM
JOB, I'M NEVER SURE HOW REALISTIC TO BE.

<http://xkcd.com/1346/>

You probably don't know what you want to do

What do you like doing?

- teaching? what level?
- working in a group or alone?
- travel?
- writing?
- can you tolerate delayed gratification?
- ...

So you like research?

- What type?
 - ▶ pure, basic
 - ▶ applied
- What area?
 - ▶ broad vs narrow
 - ▶ interdisciplinary

Why do you think someone should pay you to do research?

Do you care about ...

- Money?
 - ▶ really?
- Job security?
- Having a life outside work?
- Independence?
 - ▶ do you want to decide what you do, or is having a boss tell you what to do OK?
 - ▶ do you want to build something of your own?
- Good people to work with?
 - ▶ other staff: mentors and peers
 - ▶ grad. students
- ?

What do you need to achieve your aim?

- Skills
 - ▶ communications skills are useful almost everywhere
 - ▶ programming is useful almost everywhere
 - ▶ specifics for your job
- Show you are flexible
 - ▶ don't focus too much on a single topic – most likely you won't get a job doing it, and it makes you look inflexible
- Achievements
 - ▶ don't wait for them to happen
 - ▶ pick targets
- Extra-curricular
 - ▶ sorry, but I don't care much about you having a life
 - ▶ but I don't want to work with a dick
- References
 - ▶ develop mentors who can then provide references

Tips for applications

READ THE INSTRUCTIONS

Tips for applications

- Find out everything you can
 - ▶ ask questions (your mentors, other faculty, Internet, ...)
 - ▶ research the people (don't quite stalk them)
 - ▶ what is the culture of the place?
 - ▶ who did they last employ?
- Target what they are looking for
 - ▶ short-term v long-term
 - ▶ leadership? energy?
 - ▶ research v teaching or both?
 - ▶ filling a hole, or building critical mass in a team?
 - ▶ particular topics
- Develop general application skills
 - ▶ keep a current CV
 - ▶ if you ever can, get onto an interview panel

Tips for applications

- Cover letters
 - ▶ this is your first opportunity to impress or depress
- Don't send too much – prioritise
- Make sure part of it can't go missing
 - ▶ headers and footers with names and page numbers
- Honest but not modest
- Put effort into it
 - ▶ check it!!!!!!!!!!
 - ▶ get everyone you know to read your application

Tips on interview process

6Ps

- Find out the process (they vary)
- Know your stuff
 - ▶ your elevator talk
- Know the organisation you want to join
- If you have to give a talk PREPARE IT WELL
- Common questions – have answers
 - ▶ e.g., where do you see yourself in X years?
 - ▶ e.g., why do you want to work here?
 - ▶ e.g., are you willing to do X?
 - ▶ e.g., when could you start?
 - ▶
- PAR anecdotes (problem, action, result)
- Have questions for panel prepared
- Arrive early

Tips on interview process

- People make decisions quickly, then spend time justifying them
 - ▶ clothes (match company culture, but err on too formal)
 - ▶ good handshake, eye contact, ...
- Manners
 - ▶ be respectful, but that doesn't mean quiet
 - ▶ don't argue, complain, swear, take your clothes off, ...
 - ▶ don't be spineless: conviction, passion, and enthusiasm are good
- If you don't know, say that, but then ...
 - ▶ do better next time, but don't mislead
 - ▶ sometimes thinking on your feet can work (do it out loud)
- Take notes
- Ask questions
 - ▶ What is the size or organisation of the department, or number of students?
 - ▶ How is research funded?
 - ▶ Have I said anything in this interview or given you any other reason to doubt that I am a good fit for the role?

You may already know the answers: those may be a safer question!

Post application and interview

- Don't just let it rest
 - ▶ show you are interested
 - ★ thank you email (<24 hours) after interview
 - ▶ but remember, academic jobs are slow
 - ▶ don't be too pushy or pester people
- If you get an offer
 - ▶ find out how long you have to (reasonably) decide
 - ▶ find out conditions and benefits: pay, start date, moving expenses, ...
 - ▶ there is often some room to negotiate
 - ★ negotiate up front: its much easier to get changes made before you accept than after
 - ★ don't be a dick
 - ★ I don't bluff
 - ▶ get the offer in writing!!!

Links

- <http://www.cs.cmu.edu/~emigration/wing.html>
- <http://www.forbes.com/sites/jonyoushaei/2014/10/20/12-surprising-job-interview-tips/>
- <http://www.kellyservices.com.au/AU/Careers/my-Career-Centre/Job-Interview-Questions-and-Interview-Tips/#.VPQdoaZyh1M>
- <http://www.jobaccess.gov.au/content/how-write-job-application>

Summary

- Think strategically
 - ▶ this is a game
 - ▶ you are smart people, but you need to learn the rules to play well
- Think early
 - ▶ you have to have pieces in place years in advance
- There are a million resources to help you
 - ▶ you won't believe me/us until you are on the other side
 - ▶ but, just for me, do it anyway

Assignment

Write a CV

Further reading I



Ronald T. Azuma, "*So long, and thanks for the Ph.D.!*" a.k.a. "*Everything I wanted to know about C.S. graduate school at the beginning but didn't learn until later.*", 2003, <http://www.cs.unc.edu/~azuma/hitch4.html>.



Mor Harchol-Balter, *Applying to Ph.D. programs in computer science*, <http://www.cs.cmu.edu/~harchol/>, 2011.



L.L. McCabe and E.R.B. McCabe, *How to succeed in academics*, University of California Press, 2010, Good points about many aspects, but oriented towards the health sciences, so must be read critically.