How to find your way into industry, start-ups and academia.

A mentoring session at the Swiss Robotics Day, 2021.

Whatever career path you're thinking about, it is important to know "the rules of the game". Some apply for academia, rising start-ups, and big companies; some are well known, and some are unwritten. Marina Bill from ABB, Iselin Frøybu from Emovo Care, and Auke Ijspeert from EPFL shared their tips on how to make it in industry or academia at the Young Researchers Mentoring Session organized by the NCCR-Robotics Equal Opportunities committee at the Swiss Robotics Day 2021. The session was moderated by Marie Georgarakis (ETHZ) and William Stewart (EPFL) and lightly edited highlights are posted here.

Q: How do we chose an employer? What's the best way to approach a company that one is interested in?

Iselin: In startups it's a lot easier to get a human connection, so just approach them and speak. Have a conversation, that's the best way to start. Reaching out via email is also nice, because it shows your specific interest in the company. Show proactiveness and specific interest in them!

Marina: For companies, yes, do apply via the web forms, we do read them all, but also reach out via contacts you may have. If the company offers a position about X but you are skilled in Y, write to them. The most important thing is to show your personal interest in them. About how to choose the company: don't forget to check the people you will be working with. Who's the manager you'll work with? Do you like them? The most perfect job ever cannot compensate for a bad manager. Look for a manager who is interested in your development.

Auke: I mainly get people from the doctoral program and for me motivation letters are important. Do your homework, show your real interest and that you are aware of the type of research carried out in the lab.

Q: How can we choose our manager well?

Marina: Ask them explicitly: how do you see my development? There are questions you can prepare and then ask during the interview. "Can I grow in the company?" "I would like to speak with some of my future peers". You can ask, find out, and then follow your gut feeling! If you don't get a good vibe, you're probably right. It is really important who you work for, especially in the first years after education. Finally, hiring is difficult on both sides, so be patient.

Iselin: You can also look for internships: they are a window into the environment, giving you the chance to check the company, and get to know the people… you should interview them as much as they interview you!

Q: For Marina, how did you decide to go from a technical position to management?

Marina: I always had an interest in how products affect people. Sales came very naturally, because it provides the customers' view on products. Indeed, at ABB, most of our sales people are engineers! Sales in companies such as ABB is a very engineering job. About management, it is about people. I really enjoy it and I spend a lot of time asking myself "Who am I as a leader? How am I?". Now I know I have a style which is different from many of my colleagues, but it has been effective for me.

Q: When networking, how should we approach "approaching"? e.g. How do we approach a professor at a conference, when they're typically surrounded by other professors?

Auke: Networking is key, indeed. Have beers with people at conferences! Be friendly! I respond to almost all my emails, so dropping an email is a good way to approach as well. But make sure to address it personally as opposed to a generic "Dear professor" email. I don't like emails where you see that the sender has not put effort into personalizing the email and sends the same one to 100's of professors.

Marina: Indeed, if you're interested in someone, go up to them and present yourself.

Iselin: it can also be useful to find a person that can introduce you to the person you want to be introduced to.

Q: Who are the best people to get reference letters from?

Auke: When I started applying for positions, I thought that my CV would speak for me. No! reference letters are very important. Closed letters (that a referee sends directly to the employer) have more value than open ones. External letters are very important too later in your career: get known by people who are not your direct supervisors. In an academic career, when going for promotion (from assistant to associate professor for instance), the promotion committee will request evaluations from multiple professors in your field of research. It is important to make sure that prominent researchers in your field know about your work.

Marina: Reference letters are important. Say in your CV that you can give them upon request. Go up to people you've worked with or have a connection to and ask them if they would be ok with being your reference. Then, remind those who accepted about this whenever you give their name somewhere.

Q: How do you deal with people randomly reaching out to you in Linkedin etc?

Iselin: If you see they have a sincere interest, follow-up. On a related note, when you get a random connection request on linkedin from someone you don't know, ask them why they are reaching out to you specifically. This forces them to explain their reason.

Marina: I get very, very many but try to attend to them all.

Auke: For me, if you add a personal message to your connection request, it's a bonus with me. If you put my name in the request, I will click accept.

Q: What if you don't know yet what you're looking for, whether to be in academia or industry?

Auke: Robotics is hiring at all levels, and especially now. It is very easy to move from one field to the other. People go to industry after postdocs, and people in industry even get back to academia. Don't worry about having to make a permanent decision.

Marina: Take some time to decide, don't rush the decision. Don't be hard on yourself, thinking that you need to know exactly what you want to do. If you find that something is not the right field for you, the time you spent on it is not lost, it's all knowledge and experience you acquired.

Iselin: I think I did 6 internships in my life… if you choose wrong, it's ok! It's never too late to change, explore… and discover what you don't like to do, which is very important

Q: What are the unwritten rules in academia?

Auke: I have a long list… first of all, the importance of reference letters and personal contacts. It's rare that I hire a postdoc that I haven't met at a conference or event like this. Second, make a good research statement, show your vision, look long-term, and be ambitious. You can completely change later, anyway. When you apply for a position, show your characterizing trait, eg. I am a computer engineer. I am a mechanical engineer. Interdisciplinarity is good for research projects (e.g. for getting funding and publishing), but less for positions because you have to fit within a particular department. Also, prepare for your teaching statement: What courses does your prospective employer offer? Mention exactly which ones of those you could teach. Regarding publications: In robotics you can go for high impact publications, but they are high risk and they can take very long. Don't put all your eggs one basket, send manuscripts to smaller places as well.

Q: In Switzerland there are many many startups. What are the pros and cons of joining a startups vs a bigger company?

Iselin: Startups are not for everybody. There is a level of uncertainty, but you're likely given a lot more responsibility. You'll see your work directly on the product, and then directly in the hands of the customers. Small startups also allow you to explore nearby areas and fields. You'll have to wear "many hats", and e.g. as a mechanical engineer, you may need to get familiar with regulations. Being in a very new startup gives you the chance to grow with it. Of course, this is a risk: it might be that the startup dies.

Most of the startups here in robotics have been around for 3-4 years, that's already quite long. These startups are not as risky as one might think, but they are obviously a bit risky.

Marina: I think that the difference between startups and industry is smaller than people think it is, there are startups within big companies, for example. It might be easier in a big company to stay in a field and go deep in there, but big companies let you move around a lot too. ABB is not "one company", there are many divisions, many application fields… and they are all different. Big companies are maybe a little bit more secure, but not so much.

Auke: indeed, I think that there is a culture shift now in Switzerland and failure (of a start-up) is better accepted than before. This is a good thing. There is a lot to learn and you can do better next time.

Q: Regarding work-life balance, how do we make sure we are not indispensable but also not easily replaceable?

Auke: People are scared to mix academia and family life, because you need to move a lot before you find your permanent position. But once you do, academia allows quite some flexibility, which is very nice. Also, things are changing now, there are a lot more resources for family support. Finally, in academia it's quite rare to get kicked out once you have a permanent position, and so they are very stable positions.

Marina: I had my child with me during business trips, and my manager supported this. I am now requiring my people to spend time at home with their kids, because this is actually a very good training for dealing with customers. It is possible to have both a career and family, but you have to choose your partner wisely and have important discussions: kids or no kids? Who does this? Who does that? Life is always a puzzle. It requires planning and discussion but it is possible. Don't shy away from these discussions, both with your partner and also with your managers.

Iselin: I grew up as a kid following my mother on business trips. In startups, the environment is small and dynamic, so you can make it family friendly. Have the discussion with your manager and remember, founders are often parents themselves.

Additional random bits of advice for joining industry

- Great to have a career strategy and plan but do not forget the importance in doing a great job here and now.
- Do things you enjoy and believe in and not ONLY what you (and others think) is "good" for the career- normally what is good for the career is what you enjoyed doing.
- Choose your manager wisely
- Constantly get feedback and give feedback
- Stay curious and open for new tasks and ideas
- Find a healthy work life balance

Additional random bits of advice for joining/creating start-ups

Creating your own startup

- Find 1-2 partners in crime, it's extremely challenging and lonely to be a solo-founder
- There are plenty of funding and support in Switzerland for early stage startups, e.g. venture.ch, Venture Kick
- If you are tied to a university lab you can also apply for various grants, e.g. Gebert Ruf Stiftung Innobooster, SNSF Bridge, EPFL Innogrant or ETH Pioneer Fellowship, EPFL Catalyze 4 Life, NCCR Spin-fund
- Speak very early with potential customers to test idea, a great resource is the book "talking to humans" (https://www.talkingtohumans.com/)
- Attend some free entrepreneurship courses either through Innosuisse/Venturelab or through a startup accelerator (e.g. Masschallenge) to test and develop your idea

On finding a startup job

- Test it first: internships, semester, or master projects
- Look at startup specific job postulations, verve ventures startup jobs is a good one (https://www.startupjobs.ch/jobs)
- Follow startup newsletters, such as startupticker (https://www.startupticker.ch/en/news) and see who has recently fundraised, then you send them a spontaneous application

Important skills for startups

- Have a can-do mindset and don't give up
- Soft skills: be proactive, adaptive, resilient and creative
- Hard skills are important as you will often drive the work, but more importantly, is the ability to learn new skills quickly and independently

Other day-to-day tips when working in a startup

- Spend at least 2-3 hours a day working towards the startups key objective(s), and don't get lost in small or reactive tasks e.g. random email requests and admin

- Create clear boundaries and stick to them, both in terms of time blocking for specific tasks and for work-life balance, e.g. set personal boundaries to e.g. not work on weekends or after a certain time
- Keep healthy habits, e.g. never work while eating, get enough sleep, work out etc.
- Make time for things that make you happy (for me that's skiing)

Additional random bits of advice for joining academia

Networking is key

- Reference letters are super important for hiring and promotion committees (as much, if not more, than the CV). Ideally letters should also come from highly visible researchers who are not too close to you (i.e. not only your supervisors who benefit from your success).
- Conferences are for meeting people. Social times (breaks and dinners) are as important if not more than technical sessions.
- Go and visit labs. Short research stays in visible labs.
- Gentle promotion. Be visible. Do not undersell yourself.
- Linkedin. Add a small personal message when contacting people (that makes a big difference)

Academic and family life

- Academic and family life are compatible. It is a bit difficult at the beginning because of short-time contracts and the necessity to switch institutions, but it becomes easier later.
- The job normally offers flexible hours and academic freedom.
- There are lots of new initiatives to facilitate life as a parent as well as initiatives to improve gender balance.
- Day care can still be difficult though, join waiting lists as soon as possible.

Research domain

- Be original. Try to address new questions and new problems. No need to be the best technically. Imagination and originality are more important.
- Multidisciplinary research. Make sure to have a clear main field and business card (e.g. Mech Eng, Electr Eng., Computer science). This is important, e.g. for teaching and for joining a department. Being viewed as too multidisciplinary can be a handicap to join a specific department.

Publications

- Focus on journal papers in addition to conference papers. Conference papers count very differently from one field to another. Books and book chapters also count less.
- Avoid predatory conferences and publications
- Share your methods (e.g. your code). Highly-cited papers are about good methods that are easy to use.
- Combine high and low impact publications (do not bet everything on a single high-impact paper).
- High impact publications: cover letter is very important (should be detailed and explicit about novelty and impact). That is the place where you can boast a bit.

Institutions:

- Be flexible. Open positions often require to move to new places (very difficult to plan to join a specific institution/place). Can be exciting and stimulating.
- Try to join highly visible institutions (good for your CV). E.g. try to benefit from SNSF fellowships that allow you to go anywhere.
- Make sure to change institution at least once. It is almost impossible to succeed in academia by staying at the same institution.

Life:

- Make friends. Friendship-driven research is the best.
- Be aware of your luck (many people would love to have your level of education). Try to give back.
- Do not listen to your "imposter syndrome" little voice. Everybody has it in some way or another.
- Make sure to take many days off (weekends and holidays). It is a very good investment to increase your productivity
- Keep time for hobbies and sports.
- Have fun!