

SIGCOMM 2021 Panel: The Journey: Navigating Different Stages of One's Research Career

Panelists:

Prof. Olivier Bonaventure (UC Louvain)

Prof. Jim Kurose (UMass Amherst)

Prof. Deepak Vasisht (UIUC)

Hana B. Pasandi(VCU)

Yasaman Ghasempour (Princeton University)

Philipp Richter (Akamai Technologies),

Moderator: Tanya Shreedhar

- **What does a PhD supervisor/advisor look at when a potential PhD approaches them?**

Usually we are looking at two main things: first we look at the candidate's skills such as programming skills, communication and presentation skills, and the organizational skills. We are also interested to see if they have sparkle, passion and drive toward the research a candidate is interested to work at. The candidate aspiration and alignment with the research group.

- **What are the most important tips for early stage researchers, especially those starting their PhD's?**

Learning to balance is a very important skill, which, the sooner you can learn the better. Moreover, time management also proves to be crucial in these settings. One should be mindful of taking only as much responsibility as one can handle, since it is better to say no to an opportunity, then to overburden yourself, and underperform. So carefully consider your workload, and your time before committing to something.

Another panelist talked about the importance of getting feedback. He narrated his experience from his PhD, discussing how his advisor encouraged him to submit his work at earlier stages. While more submissions led to more rejections, in the long run, he felt it was a great idea since it allowed him to get feedback in initial stages and direct his research in the right direction.

One panelist talked about the importance of selecting your advisor carefully, and said that there is some level of chemistry between the student and the advisor. He suggested that usually advisors have a lot going on, so you need to help them focus on what you want to focus on. Make slides and say "This is what I want us to talk about. This is what we should focus on!"

As an advisor, you should try to set goals which are realistic for your students. Hoping that your student will directly submit to a top conference is an unrealistic expectation which might place unnecessary pressure on the student. Try to make their transition smooth. Start from a poster, then a journal submission, then a paper. Moreover, group work should be encouraged.

Moreover, working in groups should be encouraged. For example, pair up some first and second year PhD students with relatively senior ones or with post-docs. This allows them to learn from each other while creating a kind of pipeline, through which ideas can flow and they can even help each other out, on occasions when the advisor might not have time.

Interaction with the community is very important. Don't just isolate yourself, working on your own research. You will constantly learn about new things which you otherwise might not have been able to.

Lastly, one panelist talked about the stark difference in work ethic when you transition from undergrad to PhD. The former has a sprint-based work ethic while the latter requires a marathon-based one. Be constantly observant of what vital skills you lack and how you can improve them. It is ok if you cannot handle everything efficiently right away, but it's important to identify your weaknesses and start working on them as soon as you can.

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- **How to decide the path after PhD? Industry or Academia.**

Personal reasons, such as location, holidays, research direction, etc. play the most important role in one's decision. But either way, you do have the opportunity to collaborate with people from the other side.

One important thing to keep in mind though, is that once you go to the industry, do not assume that the industry folks will value you for your degree. You will be valued for your problem solving skills, but not much heed is given to what degree you have.

Another panelist mentioned that he had a very good experience working in industry since his project had a very direct impact on people's lives. But his transition to academia has had its own appeal, the most important being his interaction with students. He discussed how it is an extremely fulfilling aspect of his job, being able to guide and mentor new researchers, teaching them while learning from them at the same time. Doing an internship during summer will help you as well to decide.

- **Tips for landing an industrial position.**

Find a position that suits you , if you are interested to work on research you have to find out how much the company you applied at will allow. Start building relationships with companies early to help you to decide through conferences. When you apply for companies do not expect them to care about whether you have a phd or not, how many papers you published, what they care about is your problem solver skills.

- **The importance of doing a Postdoc if one wants to start an academic career.**

It's good to try different research labs and have experience in different locations, however it is not a good idea before getting an academic position to do three, four or five different postdocs. And in general the academic positions are limited so researchers should go to industry; they usually have a research lab, or build their own startup/company and labs.

- **How to be successful as an early stage independent researcher ?
What steps should be taken early on to ensure a smooth road ahead ?**

Identify your role models and say I want to be like that person. Get a mentor; what we mean by a mentor is someone you can talk to , be a bit

of a shepherd as you go through your journey, for example apply for a mentorship program through conferences like sigcomm, TMA. Discuss your work with others like with a master student, read one of your papers and would like to discuss the work further. Release your code with artifacts so others could benefit from and reuse them. Build your own social network with other researchers to gain from later. Learn to say no, it's okay if you let some deadlines pass you. Try something new from time to time, not only what you have done through your PhD. Time management skills are very important at this stage.

- **How to establish collaborations as an independent researcher at different stages of the research career ?**

Either by initiating these collaborations by yourself through conferences or when people contact you for further questions about one of your work.

- **How to balance our research vision so it would be interesting for the community, but still shows our strength?**

Try to list the assets that make you and your environment (colleagues and equipment in the departement) unique and try to build a research vision that starts from these unique features that you have.

- **One of the most challenging transitions when going from a student to a faculty member is how to define a larger research agenda that can effectively include students, both undergraduate and Master's and PhD students. How can we help others to learn this skill better?**

Difficult to answer. In my experience, I found it useful to switch from domain from time to time, e.g. every 6-10 years. This avoids getting stuck in the same domain with the same problems. On the other hand, this is a bit risky because you might not be able to obtain enough results in a new domain. Be ready to backtrack. In my case, wireless is a domain that I never really managed to correctly enter... Concerning the work with students, the key issue is to adapt the work that you suggest to the unique skills of each student. Don't ask a practitioner to immediately develop theorems or a mathematician to immediately run experiments in the lab. But they could collaborate so that each can learn the skills of the other. Remember that the combination of two students with different skills can result in much better research than simply their sum.

- **Useful resources shared during the panel by the panelists.**

- A series of career mentoring workshops, broadly for computer science :
<https://cra.org/career-mentoring-workshop/>
- The time management book by Steven Covey :
[https://www.amazon.com/First-Things-First-audiobook/dp/B0001V4ZPY/ref=sr_1_4?dchild=\[...\]ds=steven+covey+time+management&qid=1629915148&s=books&sr=1-4](https://www.amazon.com/First-Things-First-audiobook/dp/B0001V4ZPY/ref=sr_1_4?dchild=[...]ds=steven+covey+time+management&qid=1629915148&s=books&sr=1-4)
- Time management book by Alan Lakein
[https://www.amazon.com/Control-Your-Time-Life-Signet/dp/0451167724/ref=sr_1_1?dchild\[...\]+to+get+hold+of+your+time+and+your+life&qid=1629915006&sr=8-1](https://www.amazon.com/Control-Your-Time-Life-Signet/dp/0451167724/ref=sr_1_1?dchild[...]+to+get+hold+of+your+time+and+your+life&qid=1629915006&sr=8-1)
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