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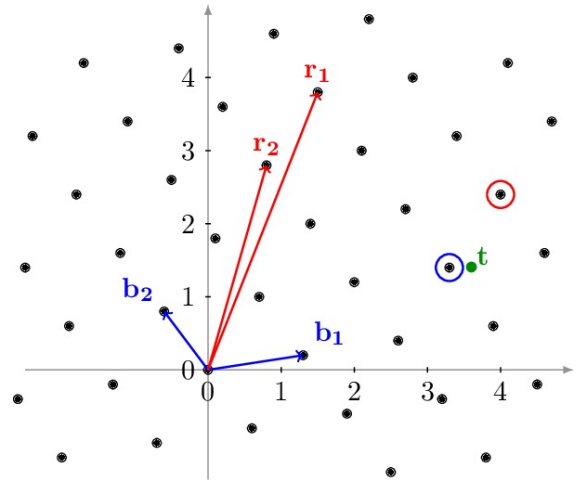
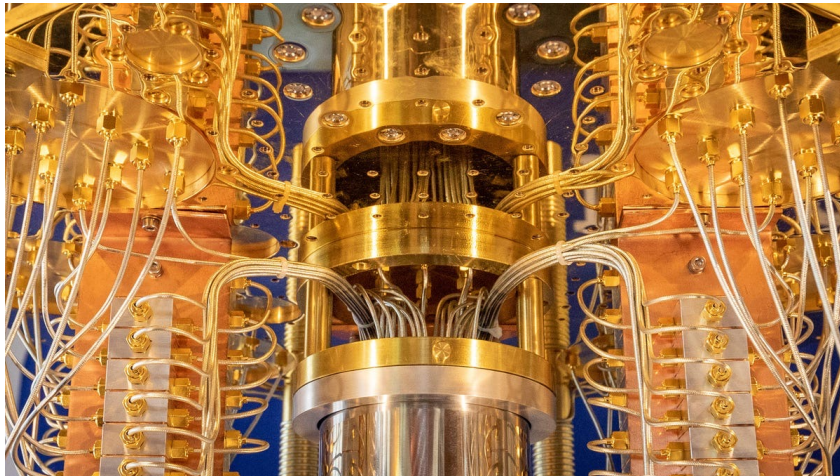
Norwegian University of
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EXPERIENCES AND CHALLENGES BEING A PHD-CANDIDATE

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Background

- I am a third and final year PhD candidate at the math department researching quantum-safe cryptography.
- I am submitting my PhD thesis in one month from now.



Disclaimer

- I am a member of the Algebra group at IMF and the Crypto group at IIK. You might do things differently.
- I am doing an integrated PhD (combined MSc + PhD).
- I did one year of duty work. Some of you do not.
- I also did my BSc at NTNU. Many of you are new.

Socialize

- Make friends in your program, it improves life quality.
- Make time for regular coffee-breaks, table tennis, etc.
- Socialize outside of work: beer in the park, boardgames, hikes, skiing trips, bouldering, cabin trips, movie nights.
- A PhD is very much the friends you make along the way.

Plan Your Day

- Know when you are productive and use that time for research. Other stuff can be done before and/or after.
- Book meetings at the same days. Have research-days.
- Think of a PhD as a job. Work “normal” working hours.

Manage Up

- Your supervisor is your best resource. Exploit that!
- Schedule frequent meetings. Prioritize. Set agenda.
- Be prepared for your meetings. Write down questions.
- Take notes. You will not be able to remember everything.

Ask For Help

- You will get stuck. Discuss with other PhDs, post docs, your supervisor, etc. Ask for tips, references, help.
- Learn how to get un-stuck. Do not ask for solutions but for "how to solve" the problems you meet. Practice it.

Research

- Sketch your ideas. Try to break it or prove it.
- The devil is in the details. Write all of it down.
- Discuss your ideas with supervisor / colleagues.
- Sketch the structure of a paper early. Then update.
- Write down abstract, introduction, background later.

Challenges

- It takes time to make progress. Be patient. Reward yourself.
- Work on your motivation. Remember why you are doing this.
- You will (most likely) not produce work class research from day one. It is a learning process. You will get there.
- Deadlines can be (really) stressful. Take a break afterwards.
- It is hard to predict impact. Aim at the big picture, not details.

Read A Lot

- Spend a lot of time reading up on your field:
 - Look into recent publications in top journals / conferences
 - Look into research conducted by the best in your field
 - Have email alerts for specific keywords at pre-print servers
 - Ask your supervisor / colleagues about recommended readings
- Do not read everything in detail. Read a lot of abstracts / introductions / conclusions. Prioritize the best papers.
- Be satisfied with the effort of reading relevant papers.

Collaboration And Networking

- Research in an active area is rarely fruitful if done in isolation. Be open to share ideas and work with others.
- Get in touch with others when attending conferences or seminars and share your interests. You might end up working together at some later point in time.
- Present your work. Others might reach out to you.

Duty Work

- Make the most out of it. It will be fun if you want it to be fun. Take initiatives and use your role to influence.
- It is a great learning experience to explain concepts to younger students. Do an effort to make it understandable.
- Talk to your supervisor / the lecturer about your role.

Reading Group / Seminar

- Join or organize reading groups or seminars. Take initiative to present papers. It is the best way to learn.
- Look out for relevant events from other universities.
- Ask questions, do not be afraid of being wrong.
- Many more opportunities today than earlier (via Zoom).

Go Abroad

- Take the opportunity to go abroad, learn from new people and cultures. It is worth the effort.
- Ask your supervisor early when it is best to go, and where it is best to go. Use their network.
- It is also possible to reach out directly to someone you would like to work with (if you have funds).

Create A Website

- Personalized websites are the LinkedIn of academia.
- Write a (few) paragraph(s) about your research interests.
- Upload a CV, link to your papers, share presentations.
- A nice place to store good resources, links, projects.

Exercise. Sleep.

- Doing a PhD means sitting still for many hours each day.
- You will perform better if you are in good physical and mental shape. These are linked. Stay active. Sleep.
- Go for walks, runs, gym, bouldering, etc. Do something. It does not matter much what you do. Have fun.
- It is often easier to keep it up if you are not alone.

Thank you! Questions?

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