

What's to be a Ph.D. ~~Candidate~~ about?

SURVIVOR

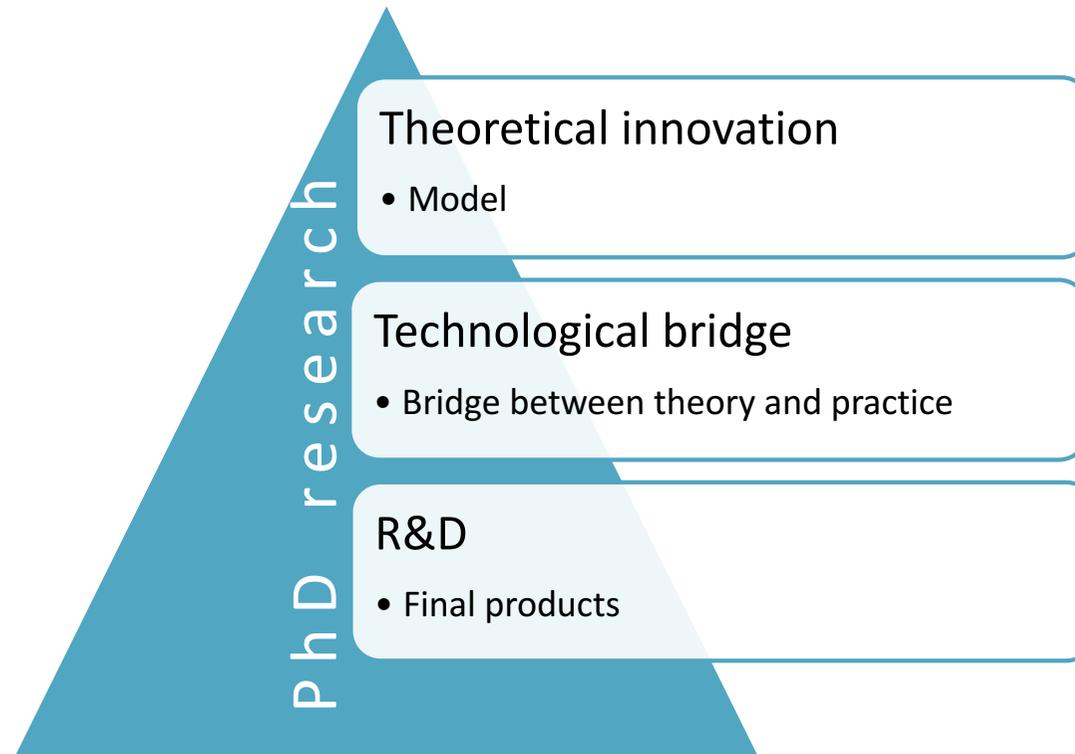

Techniques? Art? or both!?

Nouredine Tamani (Post-Doc)

What's PhD research?

- Contribute to the human knowledge
 - Something innovative
 - Solve a given problem
- A PhD student is not (**only**) an Engineer!
 - Should acquire new skills
 - Implementing a prototype is not research!

What's research?



3 Years to do the Job!

Your 1st Ph.D. year

- Keywords: *read*, **read** and read again!
- Then, **take notes!**
- Start with recent **surveys** in your domain
- Focus on the challenges identified in the surveys
- Find out the challenges where your topic fits

→ **It's time consuming! And boring too...**

Your 1st Ph.D. year

- State of the art:
 - Models, methods, approaches, algorithms, APIs, prototypes, etc.
 - Their “+”, “–” and possible improvements
 - Perform a classification (if possible)
 - Come up with good ideas to develop the next year
 - Write your report

→ So, no stress...(not yet)

Your 2nd Ph.D. year

No good idea, not at all!

- (Do not) **freak out...**
- Check out what went wrong!
- Start over the process of the 1st year

You have some nice ideas!

- Dig deeper into your ideas:
 - Develop your research
 - Publish your research

→ But HOW to do that?

Develop your idea Progressively

Workshop/Poster

- Idea is expressed clearly
- Some empirical results or prototyping

Conf. C/B

- Idea well-formalized with existing tools
- Some experimental results

Conf. B+/A

- Idea well-formalized with a new insight in the theoretical model
- Some experimental results

Conf. A*

- Idea well-formalized with solid mathematical model
- Solid experimental results

Journal B/A

- Extended version of your conference paper (at least 30% new material)

Example: a new time machine



People do not like getting wet...



Not suitable for claustrophobic



Seriously, just one seat and so old



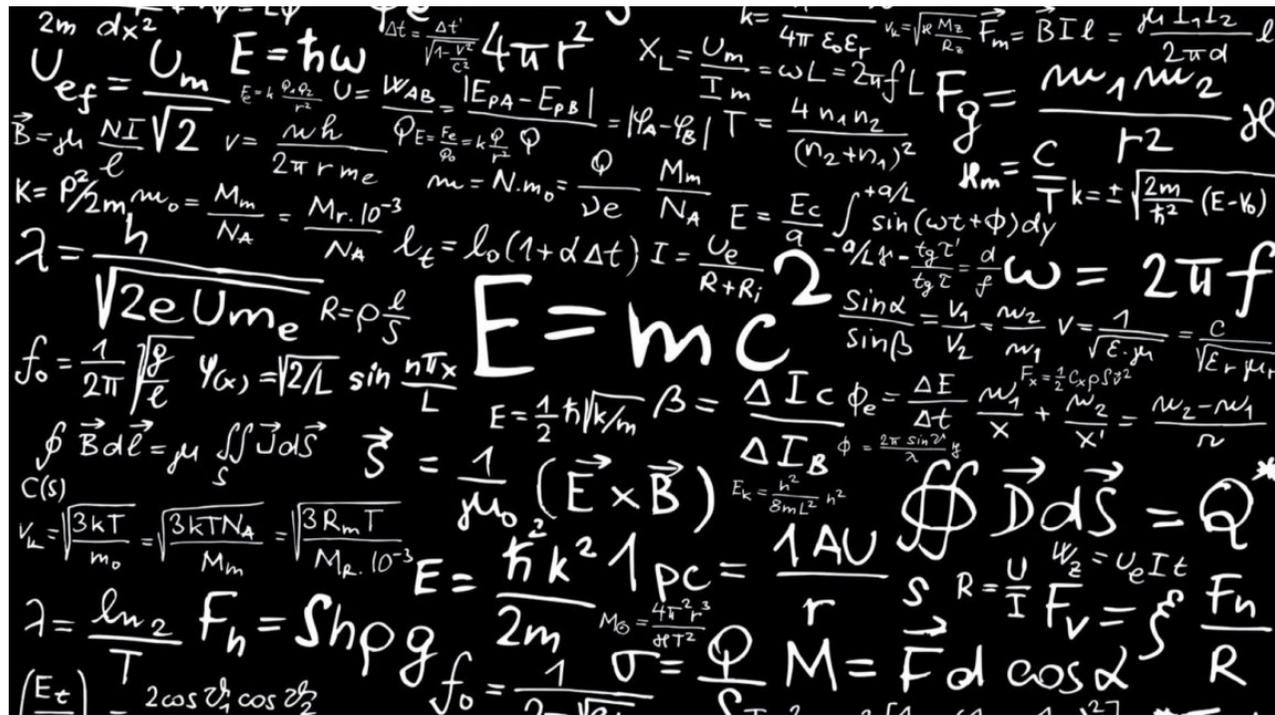
!...cool, but does not look safe!

Example: a new time machine

- Let's give the De Lorean an extreme makeover and make it fly:
 - People inside the car cannot get wet!
 - It is not a phone box, so suitable to claustrophobic!
 - It is not a one-seat sled! I can travel with friends!
 - It is designed to enforce safety and security.

Example: a new time machine

- Work the math (seriously)!



Example: a new time machine

- Design a prototype
- Do some experiments and analyze the results
- Write your **research** report:
 1. Start from your method
 2. Then your experiments
 3. The state of the art
 4. Conclusion and future work
 5. Finally, the introduction



Example: a new time machine

- Your supervisor(s) is (are) supposed to give you feedback
- How your supervisors might see your work!



From a research report to a “good” paper

- If your research report is OK then extract a research paper
- Your research report is not a paper:
 - You need here some supervisors’ advices
- A good paper is a good story-telling:
 - Technical requirements
 - Writing style

Where to submit your paper?

- Ranking + deadline(s) + number of pages + format (IEEE, ACM, LNCS, etc.)
- Conference selection:
 - Make your conference list from the papers you've read (state of the art)
 - Ask your supervisor(s)
 - Mailing lists:
 - Bull-i3: <http://icube-web.unistra.fr/gdri3/index.php/Bull-i3>
 - EGC: http://www.egc.asso.fr/13-FR-Liste_de_diffusion
 - DBWorld: <https://research.cs.wisc.edu/dbworld/>
 - ...
- Conference ranking:
 - <http://portal.core.edu.au/conf-ranks/>

How to write a “good” paper?

- Technical requirements (Skeleton or bones)
 - **What** is the subject of your paper?
 - **Why** are you trying to solve this issue?
 - **How** do you solve the issue?
 - **What** are the results you obtained so far?
 - **What** is still to do?

How to write a “good” paper?

- Writing style requirements (blood, fat, flesh)
 - Short sentences
 - Go straight to the point
 - Be kind with the authors you criticized
 - Use correct grammar, no typos (the fewer, the better)
 - A good user-guide at: <https://goo.gl/9hMRus>

Submission...

- **Before submission:**
 - Your name comes first!
 - Check the reviewing type: simple or double blind
 - Be careful with submission platforms (EDAS, EasyChair, “home-made”, etc.)
- **After submission:**
 - Enjoy the time between the submission and the notification date...
 - 2 possible outcomes:
 - Acceptance 😊
 - Rejection 😞

In case of acceptance 😊

- Prepare the camera-ready based on the comments of the reviewers
- Check the compliance with the editing rules imposed by the conference
- Go (survive) through the registration process:
 - ULR procedure is really **painful** and **time consuming!**
- Check if the conference offers student discount and/or student grant
- Prepare the “mission”!
- Prepare your **presentation** *(I need another presentation to deal with that!)*
- Enjoy the conference

In case of rejection 😞

- Take a couple of days (not weeks!) to process the rejection
- Read carefully the reviewers' comments
 - Are the comments fair and objective?
- Work on the weaknesses of your paper
- Rewrite the paper
- Submit your paper somewhere else...

→ **fingers crossed**

Your 3rd Ph.D. year

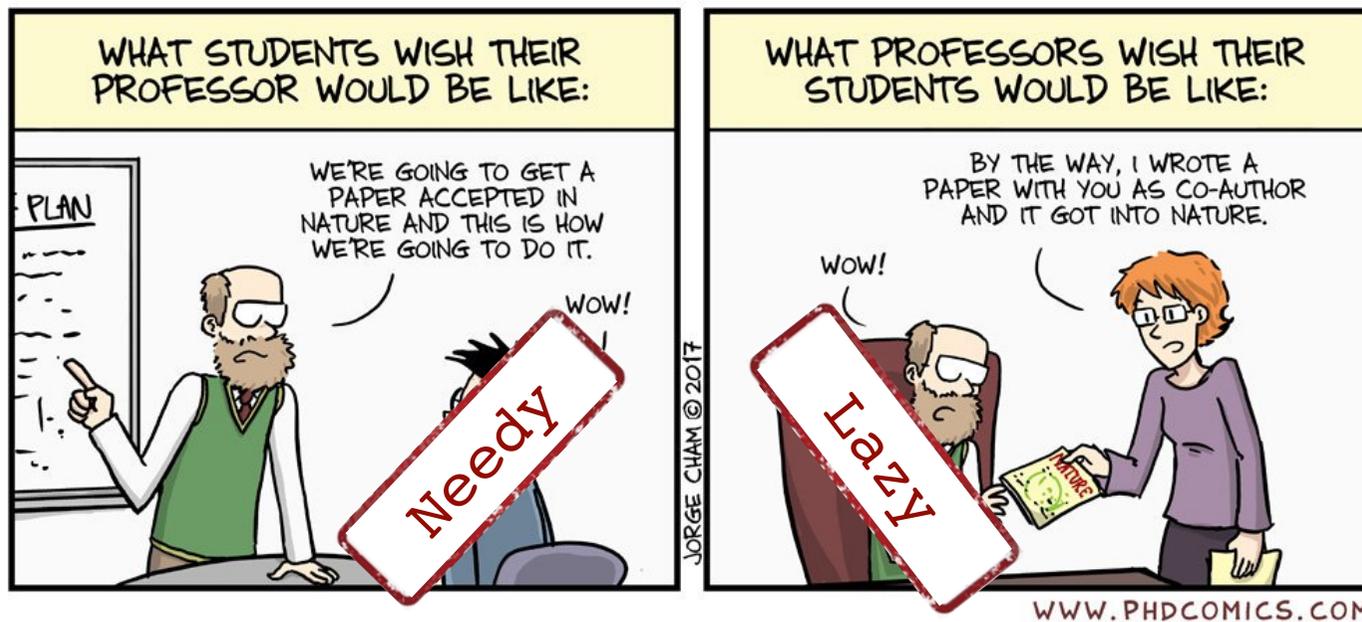
- You're supposed to have published (a) paper(s)!
 - So, in the 1st half you can improve your research track with journal paper (Time machine 2.0)
 - In the 2nd half, start writing your manuscript:
 - Between 3 and 6 months
 - Check the min/max number of pages (avoid **stuffing!**)
 - The state of the art part is the most exhausting one!

→ Look for a job!

Your 3rd Ph.D. year

- No paper: You can start to **freak out!**
 - Your supervisor(s) is (are) supposed to **not** let this happen...
 - Communication issue! Is it possible to solve?
 - Otherwise, **look for a job!**

(Serious) Expectation Problem!



What's the solution?

Your 3rd/4th ... year: The Defense

- The mean duration of a thesis in CS is around 42 months
- In France, the defense is a mere formality:
 - You are authorized to defend your thesis based on 2 reviewers
 - Do a comprehensive presentation of about 45'
 - Read carefully the comments of the reviewers
 - **What comes after the defense?**
 - **it's a story for another day...**

What is PhD research all about?

Keep pushing!