

My Story – How to get a PhD

Orientation to post-graduate studies 2009

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Outline

- My path to PhD
 - History
 - PhD topic
- Things I learned
- Life beyond PhD
- Important on-line resources

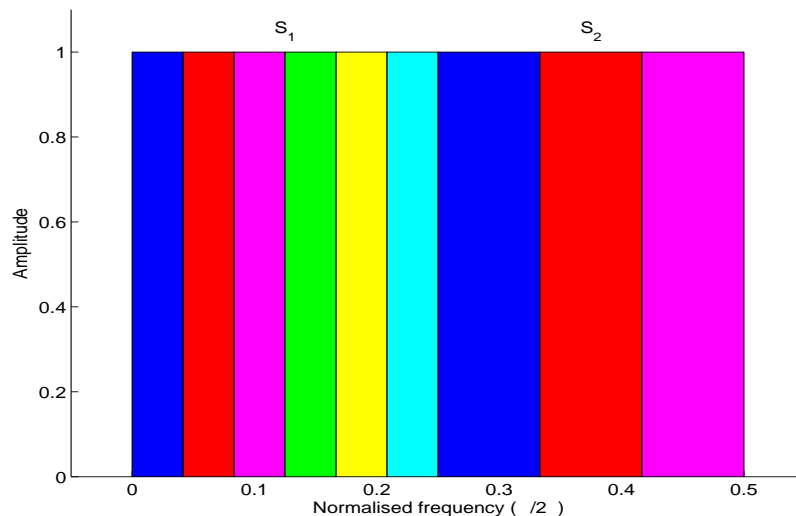
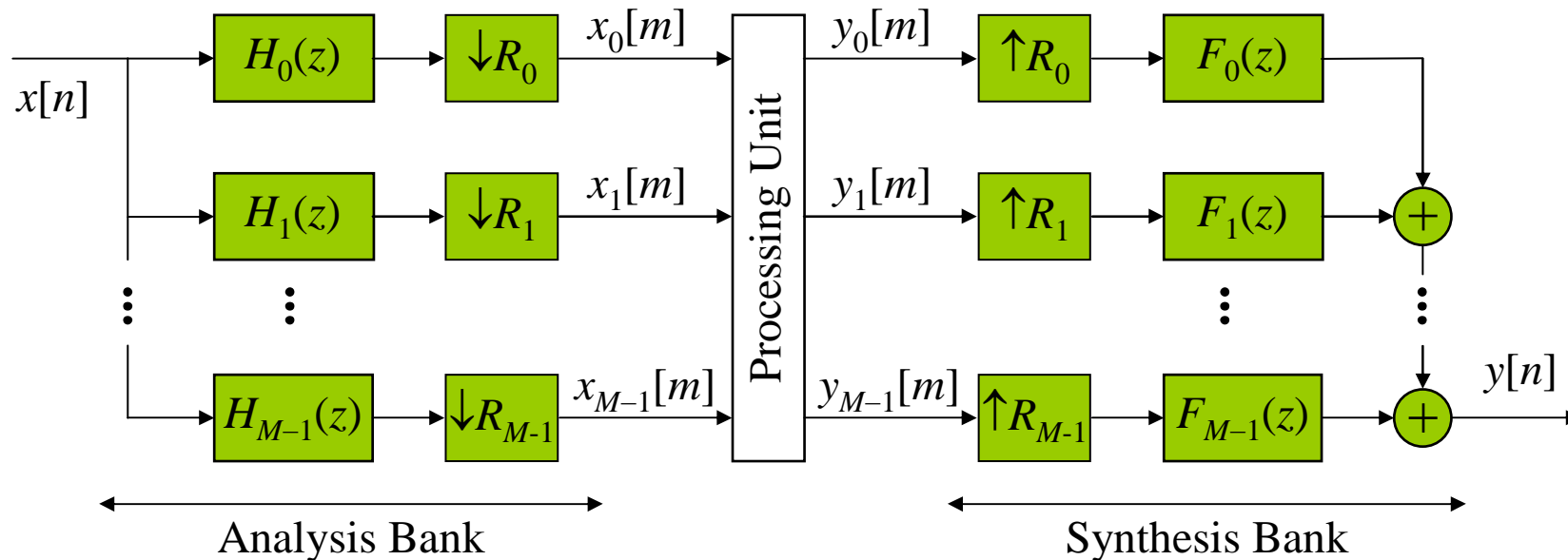
My path to PhD

- Previous education
 - Dipl. Ing. degree in 02/1994
 - MSc degree in 04/1998 ≡ Licentiate
- Came to TUT in 11/1998
 - Started as a visiting researcher
 - Became a PhD student in 11/1999
- PhD degree 08/2003
 - Actually – D.Sc.(Tech.)
- Various postdoc positions since 2003
 - 2 visits to NTU, Singapore
 - 3 year postdoc research grant from Academy of Finland

PhD Topic

- Ingredients
 - Area of research
 - A reasonable advisor
 - Choose wisely
 - You will need all the help you can get
 - Assuming your name is not Isaac Newton, Albert Einstein, etc.
 - Personal preferences, MSc degree, work, projects
 - Problem(s) to consider
 - Why it is important?
 - A lot of work
 - Remember that: *work* \equiv *luck*
 - New solutions (hopefully)
- Title: Optimal Design of Perfect Reconstruction and Nearly Perfect-Reconstruction Multirate Filter Banks
- Advisor: Tapio Saramäki

PhD Topic



- Problems to be solved:
 - How to design filters $H_k(z)$ and $F_k(z)$?
 - How to efficiently implement this filterbank
- Filterbanks are used in many modern signal processing algorithms

Things I Learned

- ***“Work should be fun!”***
 - Tapio Saramäki, TUT
 - If you force yourself to do something then your efficiency will be lower

- ***“Tomorrow is also a day!”***
 - Wu-Sheng Lu, University of Victoria
 - In the case you encounter a problem that you can not solve today, leave it for tomorrow.

- ***“It’s a PhD, not a Nobel price!”***
 - Gerry Mullins, Adelaide University
 - Article in the journal: Studies in Higher Education

Things I Learned

- ***"There are always more problems than time"***
 - ☺ Maybe me (and all other researchers, I assume)
 - You are not supposed to solve all problems
 - there are other people out there who want a PhD too
 - Not all problems are worth solving
 - Encountering bad ideas / solved problems
 - UU filters
 - Low delay FBs

- Consider PhD as an endurance test
 - Ups and downs
 - Important not to give up

Things I Learned

- ***“If you are not able to find a worthy PhD topic then you should not be a PhD student”***
 - From a presentation about PhD studies (can not recall the name of the presenter)
 - His reason: If you are not able to find good research topics then you will not be successful as a researcher
 - Might have been true in the past
 - You are expected to graduate in ≈ 4 years
 - Pass x course
 - Write y papers
 - Participate in teaching
 - I believe that the advisor should kick you in the proper direction. After you start, it is up to you to explore things further and come up with new ideas.

Things I Learned

- Do not forget that the goal (of your studies) is to finish your PhD
 - Leave some problems for other students (or your postdoc applications)
- List of people you must convince that you finished
 - Yourself
 - Your advisor
 - Reviewers (opponents)
- Advisor will tell you to finish (sooner or later)
 - You have done enough
 - He has enough from you
 - He run out of money

Life Beyond PhD

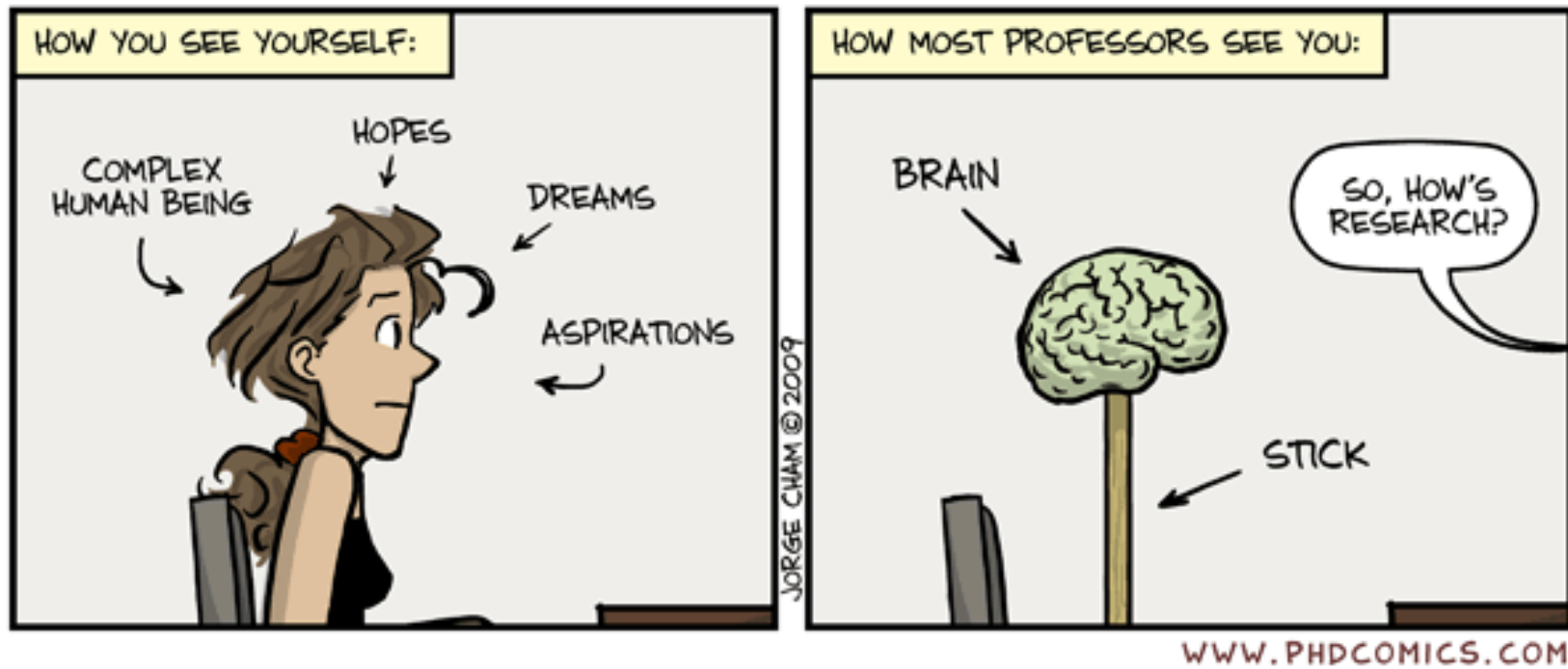
- Is there any?
 - If you ask yourself this question, at least few times per day (not counting the ones occurring in dreams), then you are close to graduation
- Yes, rumors are true, there is an afterlife
- Big question
 - Industry
 - Academia
 - Do you have good research topic(s)?
 - Time to change topic?
 - Who is going to pay your salary?
 - Be ready to write millions of applications.
 - Emphasize on research or teaching?
 - If you do not like either of them, run away.

Important on-line resource

- PhD comics:

<http://www.phdcomics.com/comics.php>

It shows you a different perspective of yourself

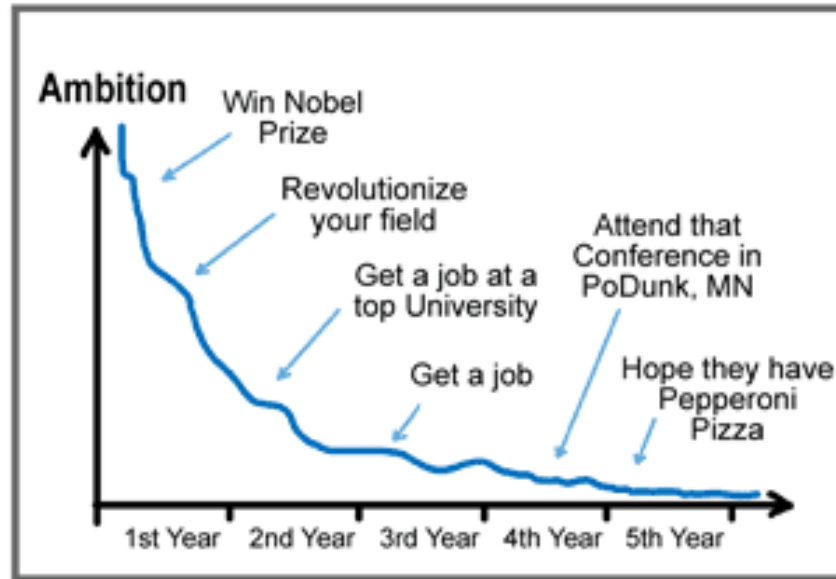


Tells you what good and bad news really are



It emphasizes your life ambitions

YOUR LIFE AMBITION - What Happened??

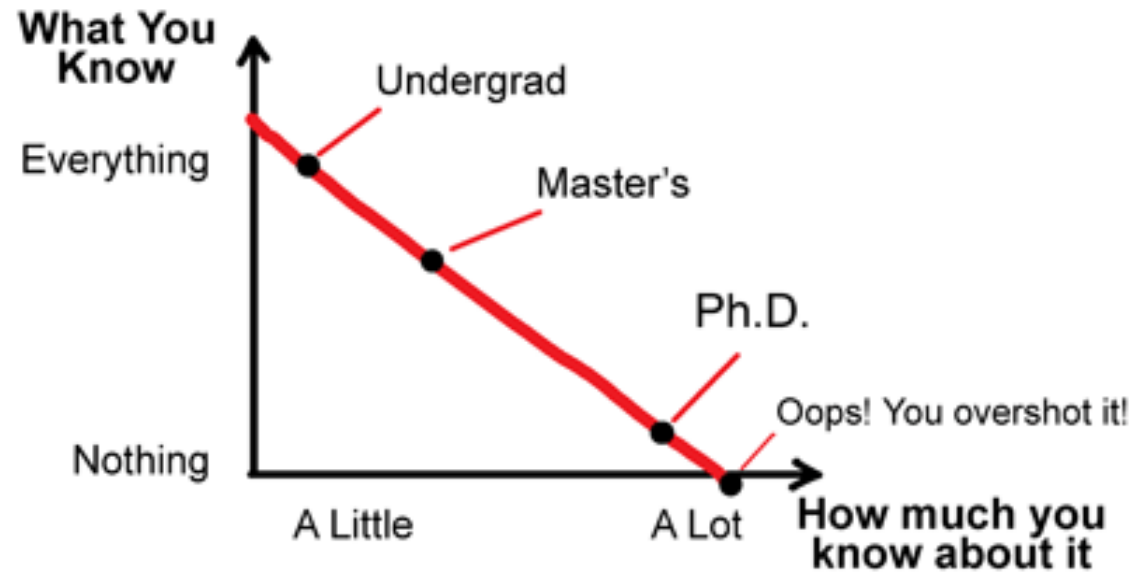


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Importance of learning

What You Know vs How much you know about it



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Relativity of time, part 1



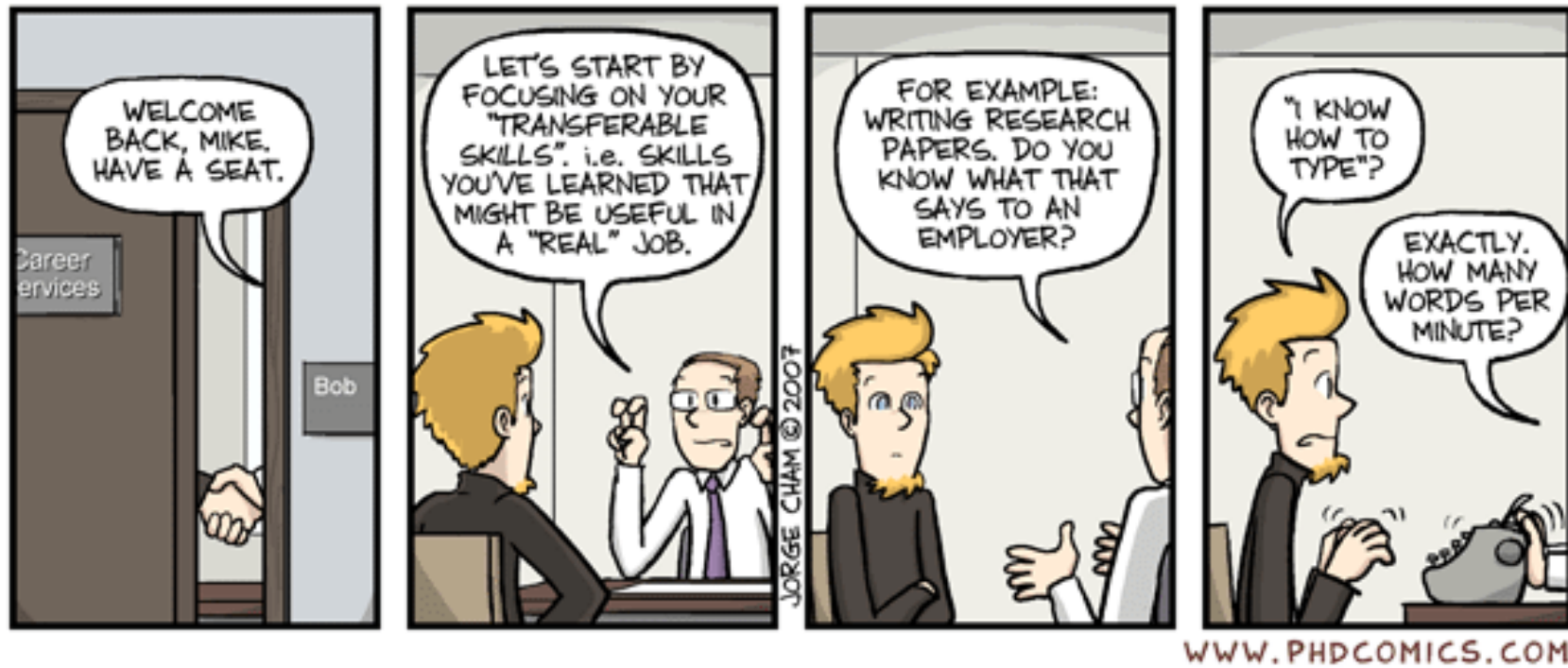
Relativity of time, part 2



It teaches you Latin



It shows you the 'value' of your PhD studies



It tells you what the thesis should be



How to write papers

Abstract MadLibs!!

This paper presents a _____ method for _____
(synonym for new) (sciencey verb)
 the _____. Using _____, the
(noun few people have heard of) (something you didn't invent)
 _____ was measured to be _____ +/- _____
(property) (number) (number)
 _____. Results show _____ agreement with
(units) (sexy adjective)
 theoretical predictions and significant improvement over
 previous efforts by _____, et al. The work presented
(Loser)
 here has profound implications for future studies of
 _____ and may one day help solve the problem of
(buzzword)
 _____.
(supreme sociological concern)

Keywords: _____, _____, _____
(buzzword) (buzzword) (buzzword)