FAKULTA INFORMATIKY
MASARYKOVA UNIVERZITA

Introduction to the PhD Study
First lecture

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The Goal of the DUVOD course

The goal is to provide new PhD students with basic orientation in the PhD study at Faculty of Informatics at Masaryk University. After taking this course, students will have a clear view on the structure of PhD study and its general formal requirements. They will also get basic knowledge about principles of a research work and will have necessary information about skills needed for successful completion of PhD study.

Syllabus

- Introduction to PhD study, its structure
- Principles of scientific work, evaluation and financing of research, progress in academic career
- Publications, work with literature, electronic sources
- Publication at conferences and in journal; impact factor, types of conferences, journals and articles, books, posters
- *How to write scientific articles properly, structure, style*
- Basics of experimental work, applied statistics
- Proposition and conducting of experiments, evaluation and presentation of results
- Ethics in science, authorship, nonpublic pieces of information, conflicts

Why study for PhD?

- To get a nice new title
- To get deeper knowledge in the subject of study
- To contribute to the pool of human knowledge
  - This is usually interpreted as "contribution to the pool of human scientific knowledge"
- To be able to present and defend results of my work
- To learn about yourself
  - Work under stress
  - Work in uncertain environment (exploration)
  - Ability to ,,push the edge" in some area
  - Ability to convince people (that you are doing something useful)

Stages of the study

- Introduction, first orientation in the field
  - Could already happen during Master study
  - Scientific methods, work with literature
- First results, publications, and failures
  - The order is purely random
- Thesis proposal ("Teze" in Czech) and State Exam
  - You are expected to already know what you will do (and when)
  - Also some previous results/publications are expected but not required (unless you want RNDr. title)
  - Usually third or fourths semester
- More results, publications, and failures
- Thesis writing and submission
  - Could be the most stressful part of the study
- Thesis defense

What to expect

- Formal requirements
  - See presentation from the Department of R&D
- Scientific requirements
  - It is supervisor (master)–student relationship
  - PhD study is about research and development
  - Independent work
    - Does not preclude work in a team
    - But your contribution must be always recognizable/identifiable
      It is very important to be able to identify and "sell" your own work
  - Expected R&D results
    - Publications (quality is important)
      Also impact is measured (e.g. citations)
    - Other results (e.g., software) beneficial, but not sufficient by itself

Publications

- An indispensable requirement (also in the Law)
  - A minimum is two peer-reviewed international publications before the thesis could be accepted for defense
- Conferences and journals
  - Computer Science traditionally uses conferences to publish the results
    - Faster to get into publication
    - Often faster to fade away
    - Beware of junk conferences
  - Journals usually get higher esteem and dissemination
    - Long to get published (years)
    - Long lasting results, usually higher number of citations
    - Becoming expected/required result, too
- Quality of publication fora important
  - Unfortunately, junk conferences and journals exist
  - The “dark side” of open access

Actual study

- Use the first year(s) of PhD study to learn more about the subject (previously not taken lectures at FI, lectures at other faculties or even universities)
- Learning skills
  - Each graduate should know what it does mean to teach
    - Does not mean you know perfectly how to teach (or like it)
    - However, each should have a teaching experience
- Many lectures just reflect what a PhD student is expected to do
  - A way how to collect credits
  - And for supervisors how to check your progress
- 20 credits minimum to pass to the next semestr
  (or 45 credits in two last semesters)

Evaluation background

- Traditionally, PhD study primary for future academicians or researchers
  - Therefore, publications as the major expected results
    - Be aware of different quality of publications!
    - To learn what is and what is not a good publication part of the PhD study
- More and more PhD graduates do not follow this path
  - A cause of (apparent) misalignment between PhD study requirements and students' expectations
  - Evolving definition of an acceptable result
- Evaluation performed once per year for each student
  - Progress according to the plan
  - Tangible results (mostly publications and their quality)
  - This may change and we can go to light-weight evaluation every other semester
- Common basis of PhD study
  - Set of mandatory lectures
  - Also soft skills

Common Basis Lectures

- 1st semester/year
  - DUVOD – Introduction to PhD study
  - DACSE – Academic Communication Skills in English
  - *Informatics seminar – eventually also in later years*
- Higher years
  - DTEDI – preparation of thesis proposal
  - DPDIS – thesis preparation
    - added a seminar for those who write/finish the thesis
  - DPRPO – poster competition
  - *DVVVT – supervising of a R&D team*
  - *DSOKL – soft skills (měkké dovednosti)*
  - DCIPR – presentation in a foreign language
  - DPUBL – publication
  - DPOMV – class-work cooperation

Only lectures in italics are not obligatory.

Study plan

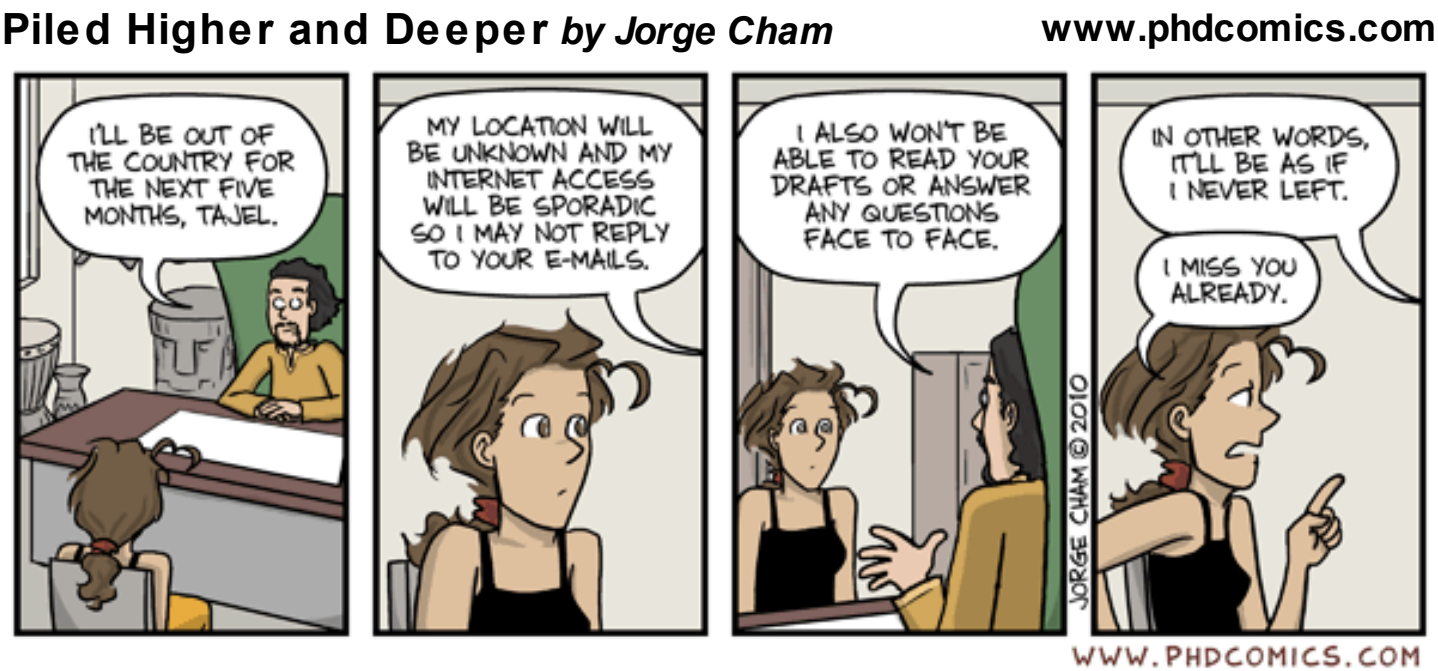
- Two plans
  1. The general overall direction of the study
  2. Yearly plans
- You are evaluated primary in respect to the yearly plan
  - A result of discussion with the supervisor
  - Should include controllable results
  - New application in IS, forcing you to define the tangible results
  - The new rules are pushing towards higher student's involvement
    - self-evaluation
    - proposal to both the overall and yearly plans formally by student, approved by supervisor
- Both plans are to help you
  - They are accepted by the Board
  - They should serve as a guideline for you

What the PhD study is about

- Lot of work
- Sometimes deep depression
- And sometimes a lot of fun and joy
  - Accepted papers
- PhD study is a full time job
  - However, 40 hours per week may not be sufficient
  - For some periods expect much higher load (and for some lower, too)
    - This “stress test” is also a deliberate part of the PhD study
  - Must have clear identifiable results
    - Quality publications essential
- Graduation
  - If you survive all of the above

More sources of information

- PhD Comics Strips (http://www.phdcomics.com)
- Your colleagues in the laboratory
- Your supervisor-consultant
- Department of R&D
- Your supervisor



How to find you are at the end?

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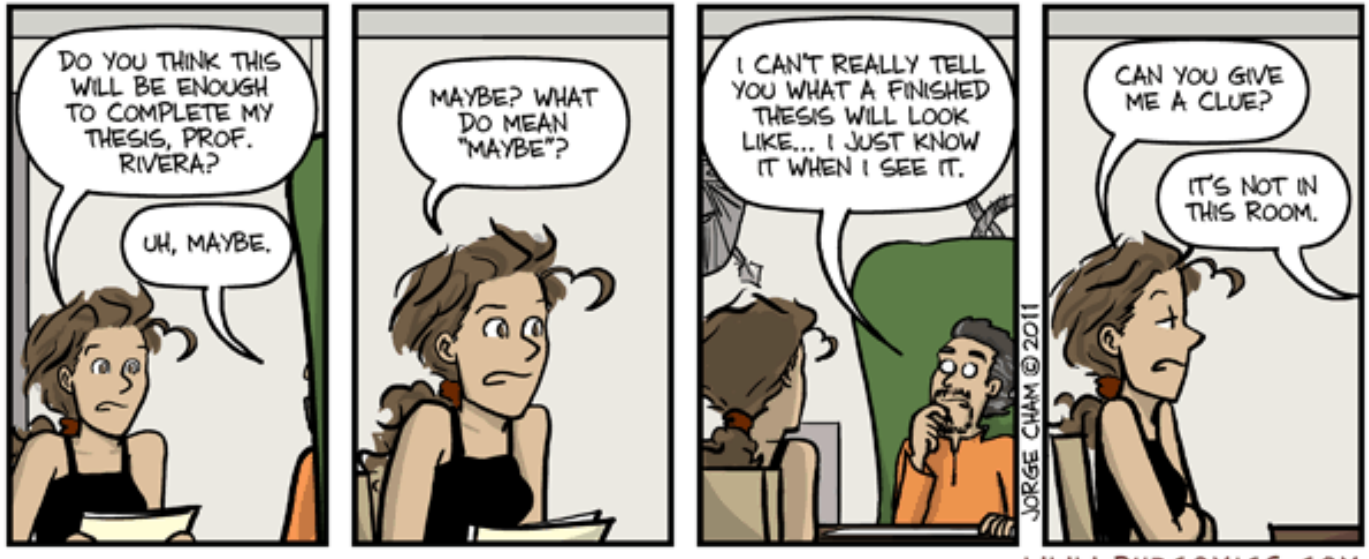

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