FAKULTA INFORMATIKY
MASARYKOVA UNIVERZITA

Introduction to the PhD Study
First lecture

Luděk Matyska

The Goal

The goal is to give 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, its formal general requirements. He will also get basic knowledge about basic and general 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
- Basic formal requirements, courses, credits, . . .
- Interaction with supervisor and consultants, solving of problems related to the study
- Work with literature, search and recognition of relevant information, sources of scientific literature and information
- Principles of bibliographic search, analysis of scientific text
- Principles of research work, experiments

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 myself
    - Work under stress
    - Work in uncertain environment (exploration)
    - Ability to ,,push the edge" in some area
    - Ability to convince people (that I am doing something usefull)

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
  - Also some previous results/publications are expected
- More results, publications, and failures
- Thesis writing and submission
  - Could be the most stressfull 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" own work
    - Expected R&D results
        - Publications
        - Other results are under discussion

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
        - Ofter 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
        - However, also junk journals exists

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 on your progress

Evaluation background

- Traditionally, PhD study primary for future academicians or researechers
  - Therefore, publications as the major expected results
    - Be aware of different quality of publictions!
    - To learn what is and what is not a good publication part of PhD study
- More and more PhD graduates do not follow this path
  - A cause of misalignment between PhD study requirements and students' expectations
  - Need for better definition of an acceptable result
- Evaluation performed once per year for each student
  - Progress according to the plan
  - Tangible results (currently still mostly publications)

Study plan

- Two plans
    1. The general overal 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
- 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
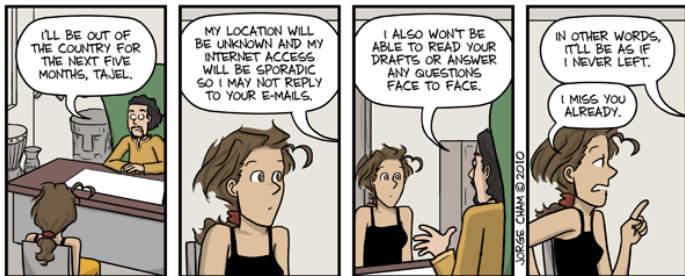
- Lot of work
- Sometimes deep depression
- And sometimes a lot of fun and joy
  - Accepted papers
- PhD study is a full time job
  - However, 40 hours per week may not be sufficient
  - For some periods expect much higher load
    - This "stress test" is also a deliberate part of the PhD study
  - Must have clear identifiable results
- Graduation
  - If you survive all the above

More sources of information

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

Piled Higher and Deeper *by Jorge Cham*   www.phdcomics.com

PhD study innovation at Faculty of Informatics MU (IDSnaFI)
(CZ.1.07/2.2.00/15.0196)