Research A (IMC031)  
Lecture I: Intro  

Lejla Batina, lejla@cs.ru.nl  
Peter Schwabe, peter@cryptojedi.org  
HG 02.059  
ICIS, DS group  
RU Nijmegen
Course objectives

• Introduction to doing research
  – practice oriented
  – you will work on different phases

• Training in self-organization
  – YOU! are responsible
  – we give you an environment to practice doing research, it is up to you to go for it

• Learn to meet **deadlines**
Learn academic competences

- Literature study
- Identifying research questions
- Writing a research proposal
- Research methods
- Giving scientific presentations
- Writing scientific paper
- Make plans
- Meet deadlines
Today’s objectives

• Overview of the course

• Organization matters

• Get you started

• Next week: 2-hour lecture (Sept. 11)
  – Q&A
  – Proposal writing
  – The research question
What is research? (according Wikipedia)

- search for knowledge
- or any systematic investigation to establish facts

- Applied vs. fundamental
  - the purpose of applied research is discovering, interpreting, and the development of methods and systems for the advancement of human knowledge on a wide variety of scientific matters
Different phases of research

- The research question(s)
- The research proposal
- The research paper
- The research presentation(s)
- Deadlines
The research questions (in short)

- Not too broad, not too narrow
- Relevant and “hot”
- Has to be clear (for everyone)
The research proposal (in short)

- Sell your research
- Show you have a good chance to find an answer
- Show that this answer will have impact
- Show your plan of attack, your method
Presentations (in short)

- A clear message
  - everybody leaves the room remembering your main point
- Well organized
- Captivating / motivating
  - make sure everyone is listening
  - make sure everyone wants to read your paper
The research paper (in short)

- Well organized
- Show a clear contribution
Two research themes

- Big data
- Internet of things
Topics within the themes

• Full list of topics available on: http://cryptojedi.org/peter/teaching/research-a-2013.shtml or just talk to us

• Visit also other group/section leaders:

  Elena Marchiori  Frits Vaandrager  Herman Geuvers
Rules of the game

• Today, you should try make pairs (pair with someone you don’t know)
• Within the next two weeks, you choose a topic
• You develop research question(s)
• You write a proposal on that question
• You present your proposal
• You do some research
• You present your results
• You write about your results
• Make sure you’re enrolled!

• Blackboard will be mainly used for
  – E-mails
  – Background reading
  – Assignments
  – Feedback
  – Grading
Lecture hours

• Wednesdays - 8:30 to 10:30
  – Only a few (3) lectures in the beginning
  – This time slot is also used for presentations

• Standard lectures
  – how to write papers/proposals, give talks, ...

• Progress reviews with us (every 2 weeks)
  – where are you in your research
  – discuss drafts of proposal, papers, slides
  – need to have something to talk about
Tools

• Proposal and paper
  – LaTeX (preferably)
  – pdf files

• Slides
  – free to choose
  – remember that pdf always works!
Deliverables

• $D_0$ – short e-mail containing:
  - the team, title, supervisor (Deadline Sept. 17, 15:00, CET)

• $D_1$ - Research proposal submission
  - question, method, plan (Deadline Sept. 27, 15:00, CET)

• $D_2$ – Slides for presentations submissions
  - $D_{2.1}$ proposal slides (Deadline October 1, 15:00, CET)
  - $D_{2.2}$ paper slides (Deadline December 17, 15:00)

• $D_3$ – Draft paper and final paper submissions
  - $D_{3.1}$ first version of research paper containing your results (Deadline December 10, 15:00)
  - $D_{3.2}$ final version of your paper (Deadline January 10, 15:00)
Presentations

- Research proposal
  - on October 2, times tba

- Paper presentation
  - on Dec. 18
How much depth?

- You are training
  - no breakthrough expected
  - re-discovering the wheel is acceptable
  - literature study is pretty good

- But more is always possible
  - it is up to you

- Most important
  - learning about doing research
Grading

• Final grade is:

\[ 0.2 \cdot g(D_1) + 0.3 \cdot g(D_2) + 0.5 \cdot g(D_{3.2}) - p \]

- \( g(D_i) \) is your grade for the corresponding deliverables
- \( D_2 \) is the average of the 2 presentations
- \( p \) is your penalty
Deadlines and penalties

• Strict!

• Miss intermediate deadline
  – penalty of 0.2 of your final grade (for each missed deadline)

• Miss final deadline
  – by less than a few days, maximum grade is 6
  – otherwise, you failed the course

• You need 5.5 or more to pass ...
Deadlines: why being so hard

• This is our life!

• EU, NWO projects
  - servers close at fixed times x:00
  - submitting $\varepsilon$ time later is not possible!

• Conference submissions
  - ditto
Your next objectives

- Make pairs (*not* with your friends!)
- Go find a topic/supervisor!