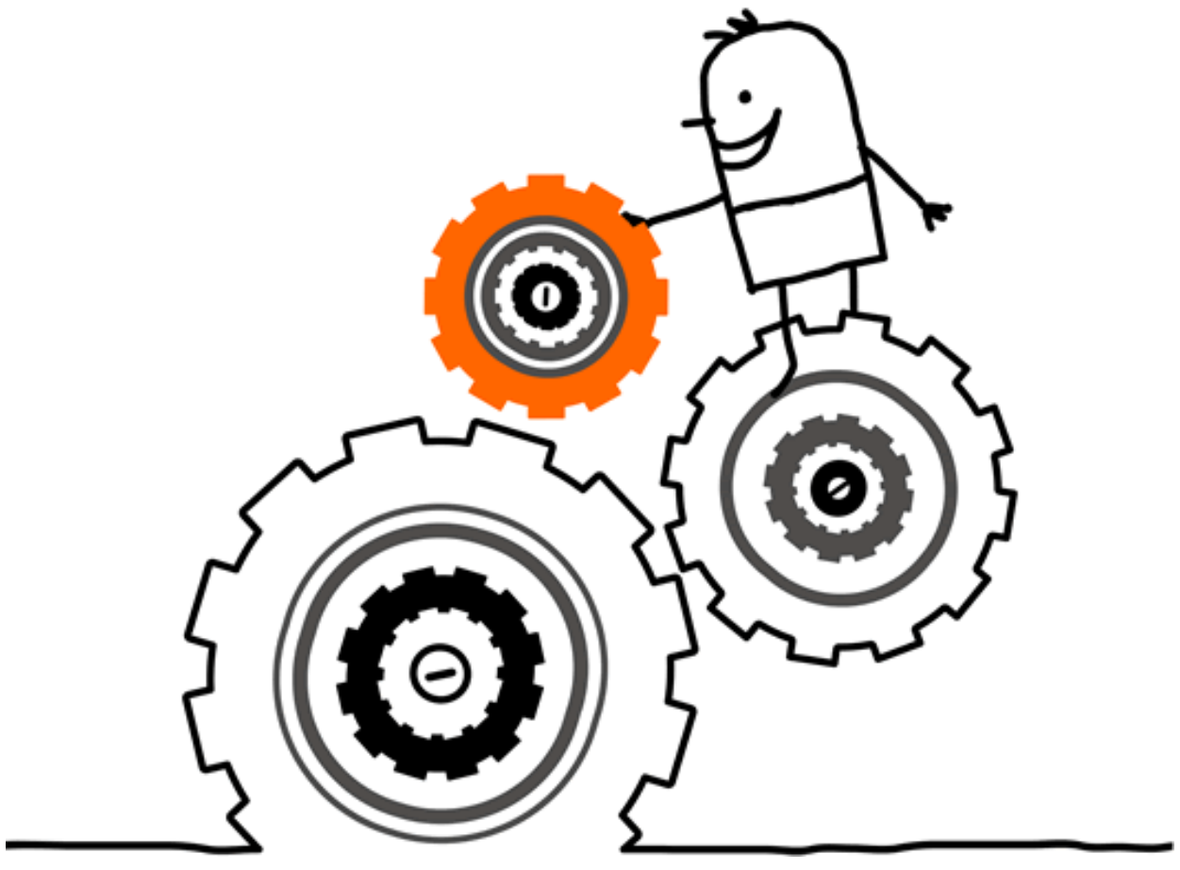
Program Synthesis

Seminar in Summer Semester 2018



Organisation

- (Informal) Biweekly meetings to check the progress

Mondays and Tuesdays,
choose your time slot until Thursday (April 12), 23:59

- Project: 3-4 research papers
- Review 3 paper + your classmate report
- Final presentation
- Final report

One-to-one Meetings

GET HELP

BE PREPARED

BEFORE DEADLINE

45 MINUTES

Proceed with project

1. Find your topic (choose form the list or suggest your own)

*Set your 3 preferences **until Thursday, April 12 9 am***

2. Get the topic one paper assigned

3. Find related papers

4. Read and understand. Show how selected papers are connected

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ASK FOR ADVICE!

Suggested topics

- Type-based synthesis
- Enumerative synthesis
- Counter-example guided synthesis
- Proof-based synthesis
- Machine learning algorithms
- Constraint-based learning
- Version-space algebra (by demonstration)
- Quantitative synthesis
- Program repair
- Superoptimization
- Database algorithms
- Data structures
- Debugging
- Program Understanding
- String-manipulation funcitons

CHOOSE TOP-3

How to Read a Paper

and take something away from it too

Run 1:

- abstract
- what does the paper present? (technique / tool / …)

Run 2:

- abstract + introduction + conclusion
- skim the rest - no details

Run 3:

- full text in detail

How to Read a Paper

and take something away from it too

- keep notes, questions as you read

  annotate the paper, or whatever suits you

- try to summarise it with your own words

  don’t copy or look at the abstract

- make a list of pro’s & con’s
- What are the key ideas and insights?

  may not be the same!

- What is new?

  you don’t have the background, but try to ‘guess’ from the paper itself

How to Write a Review

- read the paper in full
- brief summary
  - what is the problem? what is the solution?
  - does it work? how is it evaluated?
- your judgement (“comments for author”)
  - does it make sense? is the problem important?
  - is the solution novel?
  - what is good *first*? what is not so good
  - limitations, assumptions, extensions
- paper presentation
  - is the paper understandable? what could have been improved?

How to Write a Review 2

Use template! LaTeX

Conference reviews usually include ratings

We'll do them just for fun

Overall Merit

usually: strong accept, accept, weak accept, reject

Reviewer expertise

no familiarity, some familiarity, knowledgeable, expert

How to Make a Good Presentation

- 25 min max (please stick to the time!)
- imagine: you are the author and you are very excited
- example structure
  - motivation: what's the problem? why do we care?
  - for each paper briefly (!) key ideas a.k.a. contribution
  - what is in common? where are differences?
  - which paper did you like the most and why?
  - suggestions?

How to Make a Good Presentation

there’s an exception to every rule, but if in doubt:

- black on white
- few colors
- less (stuff on the slide) is more
- you may copy figures from the paper
- special effects **only** when necessary