

# From a new application to a clearly defined research problem

- Try to picture a new system, thus clarify what new functionality is to be provided and what benefit you'll bring to a user
- Among all the system modules, which are easy to build and which are challenging?
- Pick a challenge and try to formalize the challenge
  - What exactly would be the input?
  - What exactly would be the output?
- Is this challenge really a new challenge (not immediately clear how to solve it)?
  - Yes, your research problem is how to solve this new problem
  - No, it can be reduced to some known challenge: are existing methods sufficient?
    - Yes, not a good problem to work on
    - No, your research problem is how to extend/adapt existing methods to solve your new challenge
- Tuning the problem