Research Validation

Due dates: Wednesday, November 16

Assignment

The second writing assignmnet in the course is the description of how you will be validating your thesis work.

Content

Write a short description, outlining the means of validating your thesis work. Because your thesis may involve different types of research, you may need different means of describing validation.

However, this exercise is primarily targeted at you being able to design empirical studies, so even if your thesis work does not involve empirical validation, you are still asked to come up with one (read below).

Empirical Study

In all likliehood, this is what most of you will concentrate on. Empirical studies are conducted in support of empirical/experimental and project-based theses. They can also be conducted in support of survey theses and, under certain circumstances, in support of theoretical theses.

If your thesis work will be validated by an empirical study, include in your document the following:

- Brief outline of expected results. To put your validation in context, please provide a brief outline of the expected results (deliverables) of your work. The description should be concise, and should concentrate on introducing features of your work that you will be testing.

- Hypothesis. Empirical studies are driven by hypotheses you make about your work. Specify the hypothesis/ hypotheses you want to test.
- Independent and dependent variables. Your empirical study will involve data collection. You need to specify what data you will be collecting. Which independent variables you will be using to control your experiments? What are the dependent variable(s) in your experiment(s)?
- Measures. Identify how you plan to measure the results of your experiment(s). How will you judge if a hypothesis is supported or rejected.
- Experiment protocol. Describe the empirical study as you plan on conducting it.

Your empirical studies may involve measuring the behavior of software systems, collecting data as well as experiments with humans. Each type of the study can be described properly using the rubrics above.

Theses with empirical studies

If you know your thesis topic AND your thesis work involves empirical validation, try to come up with the experimental design that would faithfully validate your thesis work.

Theses with no apparent empirical component

If you know your thesis topic AND your thesis work has no apparent empirical component, you can diverge from the exact nature of your thesis topic. Come up with an "expected result" in your area of work (it DOES NOT HAVE TO BE what you will do for your thesis, but should be in the same area), and prepare experimental design to validate this newly minted expected result.

No clear thesis topic

If your thesis topic has not been finalized, invent a problem in your area of interest (it DOES NOT HAVE TO BE your eventual thesis work), and prepare experimental design for it.

Timeline and Deliverables

The assignment has only one deliverable, due **November 16**.

Deliverables. Submit your document via the course wiki. If you have not done so, create a wiki page for your thesis-related writings. The final submission can either be a PDF document (although you are allowed to post it in other formats **in addition to PDF** attached to your personal wiki page **or** a separate wiki page linked to from your personal page that contains well-formatted, readable text.

I will also appreciate a harcopy of your submission brought to class and handed to me on the due date.