Design Science Research

17 September 2019

Class Summary

[OPENING]: It was a Tuesday, and class started around 10h15 with an introduction by Professor Giovanna Di Marzo Serugendo.

[INFO]: The class is about how to best read, write, review, and learn from Research Papers; how to perform research, as well as structure questions that arise during the process of evaluating the paper. Presentation of research, verification of results, are also topics covered.

[GRADING]: Grading is split into the four (4) course-works:

1. Presentation of a Research Article (check with the professor to make sure it is an okay paper). We will be expected to do this from both the perspective of the author (explanation of the paper writ large), as well as from the perspective of a reviewer (marking critical notes and points of importance). – due

2. An 800-word piece (much like a paper/thesis) using a given template. – due 17 Dec

3. Review of the 800-word document (submitted via easychair). – due 25 Jan

4. Complete a State of the Art on a chosen topic. – due 15 June or 25 Aug (before September. Reason for this is because this acts as almost a thesis-like work in terms of time dedication required, so completing it later is okay. But must be done well in advance before your thesis defense. This assignment is also worth HALF of your entire grade.)

[WARNING]: Since the course is structured differently in terms of assignment due dates, DO NOT REGISTER FOR THE EXAM for the course. Just leave it blank, hand in the assignments at the requisite dates through the proper channels.

[SUMMARY]: In CS research, the meta seems to be towards nitpicking for novelty, and therefore we must evaluate the gaps in knowledge and try to pick out a niche for when we are presenting our own research. An “artifact” is like an object (in the coding sense) that we use in order to gain more knowledge/solve a problem. This idea of developing “new” “artifacts” is where the CS research meta is centralized at right now.

The four types of research:

1. Pure Research/Blue Sky Research (curiosity driven, no commercial value, no specific intent to solve a problem).

2. Applied Research (aiming to solve practical problems, commercial value).

3. Government Research (aiming to solve government defined problems. “Societal” value).

4. Commercial Research (aiming to solve a problem defined by businesses, commercial value).

The Design Cycle is to:

- Identify a problem.

- Check the literature (and define the scope of your problem).

- Create a niche.

- Develop the artifact.

- Determine the results, and evaluate its worth.

Good to note that abstraction sometimes gives you a bigger scope of view, allowing you to see cross-over between two topics that seemingly did not have an intersection, giving you insight on how to solve your problem.