**Department of Computer Science and Engineering**

**College of Engineering, University of Nevada, Reno**

# CS 709

# Advanced Topics in Computer Science [Software Engineering]

## Assignment #3

## Assigned Research

September 26, 2017

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| **Due:** | Wednesday, October 11, 11:59 pm (by email)<br>Single PDF file, named A3_YourLastName.pdf |
| **Points**: | 80 |
| **Weight in course grade**: | 7% |

Select one of the following research topics in software engineering (SE):

- Model-driven development (or model-driven engineering, or model-driven architecture)
- Domain-specific languages (DSL)
- Modeling languages and notations (e.g., UML, formal notations)
- Agile methods (e.g., XP, SCRUM)
- Software product lines
- Software requirements
- Software architectures
- Service-oriented architectures
- Software engineering for specific domains (e.g., computer games, embedded systems)
- Software tools and environments (you can particularize the tools for specific activities, e.g., data visualization, project management, software design, automated code generation, automated testing).
- Software frameworks
- Another SE topic approved by the instructor

Research the topic and provide the following:

1. **Overview of the topic** [25 points]

Describe what is the topic about, what are its distinguishing characteristics, and why the topic is important from a software engineering point of view. Briefly describe two examples of application (e.g., existing or potential projects) and indicate the main challenges currently addressed by SE researchers working on this topic. Specifically, identify at least 3 research questions or research directions for the topic (you can cite other references than the paper in Section 2 below) [recommended 250 – 500 words].

2. **Representative paper or technical report** [25 points]

Find a major/seminal paper or technical report about your selected topic and summarize its main ideas and contributions (300 to 500 words). Indicate your own views on the paper or report. If you select a paper, it should be different from the ones you used in Assignment #1. Important, the paper or the technical report should provide a roadmap, overview, survey, or key knowledge about the topic.

3. **Resources** [30 points]

Provide information about relevant resources pertaining to the topic. Specifically, provide at least 7 items (each with a brief description of 50 to 100 words), at least one for each of the following categories:

- Relevant websites
- Relevant research labs and/or organizations
- Important books on the topic
- Other significant paper(s) (than the one you used in Section 2 above)
- Major project(s)
- Major tool(s)
- Other (e.g., related online courses, PhD theses, sets of slides, videos, etc.)