

Thesis Topic**A Systematic Literature Review on Architecture-Based Methods to Develop Self-Adaptive Systems****Degree level**

Bachelor/Master

Company

None

Description

Software architecture offers an appropriate level of abstraction and generality to design and develop self-adaptive software systems (SASS). There have been several architecture-based solutions, such as Rainbow, models at runtime and MAPE-K feedback loop, proposed to develop self-adaptive systems. These methods apply architectural principles of abstraction and separation of concerns to lay foundations for the development of SASS. To the best of our knowledge, there exists no study, which provides systematic literature review on architecture-based methods to develop SASS. This study is planned to fill this gap by answering following research questions:

1. What are current trends in applying architecture-based methods for the development of SASS.
2. Which architecture-based methods have been used for the development of SASS.
3. What are the challenges in the application of architecture-based methods for the development of SASS.

Tasks

The degree project involves following major tasks:

1. Identify and describe challenges in the application of architecture-based methods for the development of self-adaptive systems
2. Identify various architecture-based methods or techniques that have been already used for the development of self-adaptive systems

Requirements

- 4DV610, Adaptive Software Systems or knowledge of SASS
- Good understanding of “how to plan and perform” a systematic literature review

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