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# Bachelor Thesis Topic

## Incremental Fault Tree Analysis in CoWolf

### Motivation and Background

FMEA and FTA are common techniques to certify the safety critical systems. Fault trees are wide spread modeling approach for such analyses. These models are usually very large and frequently changing with the new requirements of the software systems. An incremental analysis is promising in a user friendly framework such as CoWolf [1] that provides the co-evolution steps.

### Goals

The goal of this thesis is to support the evolution of fault trees by implementing the transformations of the changes and integrating an incremental analyzer to CoWolf co-evolution and analysis tool. CoWolf is an open source generic framework that can support evolutions of the models and analysis. The created technology can be applied for an industrial case study.

### Description of the Task

The specific tasks are:

- Calculation of the diffs between evolving models
- Transformation of diffs to grammar instances
- Integration of the incremental analyzer to CoWolf
- Evaluation

### Research Type

Theoretical Aspects: \*\*\*\*\*  
Industrial Relevance: \*\*\*\*\*  
Implementation \*\*\*\*\*

### Prerequisite

The student should be enrolled in the bachelor/master of software engineering or bachelor/master of computer science program, and has completed the required course modules to start a bachelor/master thesis.

### Skills required

The student should have or be willing to acquire the following skills: programming and experience in java with modeling components of Eclipse platform.

### References

[1] <http://cowolf.github.io/>

### Contacts

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### Application

Please contact me during my office hours or send me an email with the title: “[ThesisProject]-FTAinCowolf” to [se-career@informatik.hu-berlin.de](mailto:se-career@informatik.hu-berlin.de)