Trusted Systems

ECTS
3 crédits

Hourly volume
60h

Introducing

Description

Objectives

Software play a key role in many industrial domains, including safety critical ones (transportation, health, business, ¿) where defects can have a strong direct, or indirect, impact on human life.

This UE provides 2 courses that contribute to improving the quality of software and the trust we can have in it.

-Software and System Engineering provides the core concepts needed to build trusted software intensive systems. Model Driven Engineering will be a core element as it allows to model application domain specific elements and to ease the building of domain specific tools.

-Modeling, Resolution and Proof provides the elements from discrete mathematics that allowing modeling formally the requirements for software systems and to carry formal proof of correctness about their behavior. These elements are also at the root of symbolic artificial intelligence in order to model knowledge, structured data and to explain the decision taking by systems. We will also illustrate how these tools can be used for discrete optimization.

This UE tackles both the theoretical knowledge and methods, and their use in representative tools.

Necessary prerequisites

Computer use
Programming
Basic general algebra

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

Toulouse