Educational resources

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This site provides teaching resources for students taking courses at the University of Lorraine, particularly the IT Masters and Telecom Nancy. Last updated 3:43 P.M.on January 13, 2025.

1 Course ASPD Distributed Algorithms

The course Distributed Algorithms ASPD is taught in the Master in Computer Science of the University of Lorraine and in the Master in Computer Engineering of Telecom Nancy. The lectures notes and documents for the students are at the link ASPD

2 Course MOVEX Modelling, Verification and Experimentation for Software-based Systems

The course Modelling, Verification and Experimentation for Software-based Systems (MOVEX) is taught in the Master in Computer Science of the University of Lorraine and in the Master in Computer Engineering of Telecom Nancy. The lectures notes and documents for the students are at the link MOVEX and MALG

3 Course MOSOS Modelling Software-based Systems using the Event-B modelling language

The course Modelling Software-based Systems (MOSOS) is taught in the Master in Computer Science of the University of Lorraine and in the Master in Computer Engineering of Telecom Nancy. The lectures notes and documents for the students are at the link MOSOS

4   Course MVSI for french students (in french)

Les élèves apprentis de seconde année trouveront un ensemble de ressources pédagohiques comme les textes des cours et des exercices ainsi que les solutions des exercices en consultant ce lien MVSI

5   Using the Event-B modelling language for teaching verification techniques

Verification of program properties such as partial correctness (PC) or absence of errors at runtime (RTE) applies induction principles using algorithmic techniques for checking statements in a logical framework such as classical logic or temporal logic. Alan Turing was undoubtedly the first to annotate programs, namely Turing machines, and to apply an induction principle to transition systems. Our work is placed in this perspective of verifying safety properties of sequential or distributed programs, with the aim of presenting them as simply as possible to student classes in the context of a posteriori verification. We report on an in vivo experiment using the Event-B language and associated tools as an assembly and disassembly platform for correcting programs in a programming language. We revisit the properties of partial correctness and the absence of run-time errors in the context of this experiment, which precedes the use of Event-B as a method of correct design by construction. We have adopted a contract-based approach to programming, which we are implementing with Event-B. A few examples are given to illustrate this pedagogical approach. This step is part of a process of learning both the underlying techniques and other tools such as Frama-c, Dafny and Why3 . . . , which are based on the same ideas.

Please visit the link FMT.

6   Course ASPD on modelling, verifying and trying to understand distributed algorithms usd in main computer systems.

7   Course DISCONT Modelling Modelling Systems

The course Modelling Modelling Systems (DISCONT) is taught in the Master in Computer Science of the University of Lorraine and in the Master in Computer Engineering of Telecom Nancy. The lectures notes and documents for the students are at the link DISCONT. The lectures have been designed in the ANR project DISCONT and it has been taught two times for assessing it.