TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

Module Handbook

TUK MODHB Homepage

Module INF-88-74-M-7

Research Topics in Program Synthesis and Reliability (Seminar) (M, 4.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
INF-88-74-M-7	*Research Topics in Program Synthesis and Reliability (Seminar)*	4.0 CP (120 h)

Basedata

CP, Effort	4.0 CP = 120 h
Position of the semester	1 Sem. in SuSe
Level	[7] Master (Advanced)
Language	[EN] English
Module Manager	Majumdar, Rupak, Prof. Dr. (PROF | DEPT: INF)
Lecturers	Majumdar, Rupak, Prof. Dr. (PROF | DEPT: INF) Darulova, Eva, Dr. (WMA | DEPT: INF)
Area of study	[INF-MPI] Max-Planck-Institute
Reference course of study	[INF-88.79-SG] M.Sc. Computer Science
Livecycle-State	[NORM] Active

Notice

Additionally, homework and in-class or take-home exams may be given.

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2S	INF-88-74-K-7	P	AUSARB_P	no	4.0	irreg.

- About **[INF-88-74-K-7]**: Title: "Research Topics in Program Synthesis and Reliability (Seminar)"; Presence-Time: 28 h; Self-Study: 92 h
- About **[INF-88-74-K-7]**: The study achievement **"[AUSARB_P] written elaboration and presentation"** must be obtained.

Evaluation of grades

The module is not graded (only study achievements)..

Contents

From [INF-88-74-K-7] Research Topics in Program Synthesis and Reliability (Seminar):

The idea that we could tell a computer what we want and it would automatically figure out how to achieve it has fascinated scientists for a long time, but it has also been an elusive goal. Via recent research papers in the area of program synthesis, this seminar will look at the significant steps which have been made towards this grand vision. We will discuss what is currently possible, for which application domains program synthesis is successful, what the main challenges are and what perhaps will never be feasible. The paper selection will cover the major synthesis techniques to provide an overview of the current landscape. The name 'synthesis' can mean many things, in particular there are two different areas whose goal is to generate programs. 'Functional synthesis' aims to synthesize programs whose inputs are finite, e.g. a sorting algorithm. Whereas the input of programs generated by 'reactive synthesis' are infinite streams, e.g. in embedded controllers. The approaches in these two domains are quite different, and in this seminar we will focus on functional synthesis.

Competencies / intended learning achievements

- Ability to familiarize with a special topic in the field of functional program synthesis (original literature, journals)
- Ability to present a specific topic in a comprehensible way using electronic media
- Ability for technical discussion

Literature

From [INF-88-74-K-7] Research Topics in Program Synthesis and Reliability (Seminar):

Will be announced in the preliminary meeting.

Requirements for attendance of the module (informal)

Target audience: final-year Bachelor or Master students

Requirements for attendance of the module (formal)

None

References to Module / Module Number [INF-88-74-M-7]

Course of Study	Section	Choice/Obligation
[INF-88.79-SG] M.Sc. Computer Science	[Specialisation] Specialization 1	[WP] Compulsory Elective
[INF-88.79-SG] M.Sc. Computer Science	[Specialisation] Specialization 1	[WP] Compulsory Elective