

24.10.19

Dear Sir/Madam,

Enclosed please find a report on my research activities that have been done during my stay in KIT (from July 10 to October 24, 2019).

I have collaborated with the teams led by Prof. Beckert (ITI) and by Prof. Reussner (IPD).

With the team of Prof. Beckert I have been working on several topics.

Bernhard Beckert, Mihai Herda, and Michael Kirsten , and I wrote a paper entitled " Integration of Static and Dynamic Analysis Techniques for Checking Noninterference" that deals with Information-flow control (IFC). This paper will be submitted to "State-of-Art volume on Deductive Verification celebrating 20 years of KeY" (due date November 30).

With Mattias Ulbrich, Alexander Weigl , and Jonas Klamroth we wrote the paper " A Framework for the Runtime Verification of Generalized Test Tables".

The paper describes an approach for generated software modules that can monitor reactive system, where runtime monitors are used to check whether the current trace diverges from the normal behavior. We plan to send the paper to the ETAPS conference.

With Mihai Herda I was working on his PhD thesis, entitled "Combining Static and Dynamic Program Analysis Techniques for Checking Relational Properties".

With the team of Prof. Reussner I have been working mainly of writing a paper on the development of cyber-physical systems (CPSs). We are still working on writing the paper (due date is November 20, 2019). We have identified the challenges in developing CPSs, and the ways to tackle those challenges. This paper will be sent to the journal Frontiers of Information Technology & Electronic Engineering (Springer). This work has been done with Sandro Koch and Robert Heinrich.

I would also like to thank you once again for your support. This enabled me to stay in KIT for a fruitful period, working with two excellent teams.

Thanks a lot.

Sincerely.

Shmuel Tyszberowicz.