WWTF Project NXT19-006

AutoTest

Abstract

We're facing a future in which roads will be dominated by vehicles that are controlled by software. How can one make sure that this software isn't riddled with bugs? Rigorous safety standards require manufacturers to thoroughly test safety-critical software deployed in cars. With an increasing part of the value chain made up by software, the effort to verify this software increases accordingly. In the NEXT project AutoTest, we set ourselves the goal to automate the verification of safety-critical automotive software. While software verification has been successfully applied in several domains, the verification of automotive software requires an adaptation of the existing tool chains to support software that is based on the AUTOSAR standard, which is widely used in automotive software. We developed tools that enable automated checking of AUTOSAR software modules. Together with our industrial collaborator TTTech, we used these tools to automatically check a range of AUTOSAR software modules for bugs. The tools developed in the scope of the project now form the basis of a research collaboration with our industrial partner TTTech.

Keywords:
formal verification, automated testing, automotive, AUTOSAR

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Further links about the involved persons and regarding the project you can find at
https://archiv.wwtf.at/programmes/new_exciting_transfer_projects/NXT19-006