

Jury report

Netherlands Prize for ICT Research 2026 (Nederlandse Prijs voor ICT-onderzoek)

The correctness of software — is a computer program doing what it is supposed to do? — is a central question since the early days of computing. As software nowadays is omnipresent in daily life, controls autonomous cars, safety-critical systems such as the storm surge barrier in the “Nieuwe Waterweg”, reliable and secure software is pivotal. Big companies such as Microsoft, Amazon, and Meta heavily invest in safe and bug-free software.

Checking the correctness of programs is however a notoriously hard problem. In the late 1940s, the famous Alan Turing showed that checking whether a program halts on every possible input is a task that cannot be automated. Thus not even the most powerful computer on the globe is able to check whether an arbitrary program is correct.

Does this mean that striving for bug-free software is hopeless? On the contrary! Robbert Krebbers develops semi-automated techniques for verifying programs. He is a top researcher in program verification worldwide. He made fundamental contributions to the computer-aided verification of programs. His work has its roots in program logics and type systems.

Krebbers specialises in concurrent programs. Such programs consist of many threads running in parallel while being able to modify shared data. Many software flaws and security leaks are caused by concurrency bugs. Threads that are mutually waiting for each other and thus block the program’s progress is a classical example.

The strength of Krebbers’ research is that he turns deep theoretical findings into practical techniques and software tools. He has made his program verification techniques scalable to real-life software written in modern programming languages such as *Rust*. Krebbers is moreover one of the key developers of the open source verification platform *Iris*, a platform used by researchers at MIT, Meta, and BlueRock Security.

Krebbers has an outstanding international reputation. He leads the program committees of three top conferences in programming languages in 2026 and 2027. He communicates and collaborates extensively with parties outside academic circles to pave the way for large scale real-life adaption of his scientific results.

His research received numerous awards and honours. Krebbers and the *Iris* development team received the prestigious Alonzo Church Award in 2023. This award is for an outstanding contribution on logic and computation within the past 25 years. Several of his papers have been distinguished at flagship conferences. He has also been extremely successful in acquiring research funding. This includes an ERC consolidator grant, an NWO XL grant, and a prestigious Google research grant.

The jury of the Dutch ICT Award 2026 has unanimously decided to grant the Dutch ICT Award 2026 to Robbert Krebbers for his outstanding contributions to program verification, in



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particular his ability to turn deep theoretical results into practical and scalable verification techniques. Many congratulations!

Prof. dr. F.A.H. (Frank) van Harmelen, hoogleraar kennisrepresentatie Vrije Universiteit Amsterdam

Prof. dr. ir. dr.h.c. J.-P. (Joost-Pieter) Katoen, hoogleraar Software Modeling & Verification RWTH Aachen University, hoogleraar Formal Methods Universiteit Twente, lid Deutsche Akademie der Wissenschaften Leopoldina, sectie "Informationswissenschaften"

Prof. dr. ir. M.R. (Maarten) van Steen, hoogleraar informatica Universiteit Twente, wetenschappelijk directeur ICT Onderzoeksinstituut Universiteit Twente

The online jury meeting took place on December 15, 2025, and was chaired by KHMW societal member prof. dr. P.L.C. (Paul) Hilbers and also attended by prof. dr. A.P. (Ad) IJzerman, KHMW board member and academic secretary for STEM and medicine.