

Jury report

Netherlands Prize for ICT Research 2025 (Nederlandse Prijs voor ICT-onderzoek)

The Netherlands Prize for ICT Research is intended for a scientific researcher who conducts innovative research or is responsible for a scientific breakthrough in ICT. The prize is a tribute to the researcher as a person and a promotion for the ICT field. The prize winner will be involved in a publication by NWO with an accessible explanation of the awarded work and its importance, which will be distributed digitally to schools and other institutions.

Five nominations of exceptional quality were received for the 2025 Netherlands Prize for ICT Research. It was clear to the jury that all candidates belonged to the scientific top in their peer group and all of them reached scientific breakthroughs and impacted the scientific world. The winner of the 2025 Netherlands Prize for ICT Research stands out with respect to the impact of the research in the world.

We are pleased to announce that the Netherlands Prize for ICT Research 2025 goes to Prof. Hannes Mühleisen.

Mühleisen's main contribution is the DuckDB system, which he created with his PhD student, Mark Raasveldt, at the Center for Mathematics and Computer Science. The name is derived from Mühleisen's pet, and release 1.0 was named Snow Duck, a non-existent species supposedly "known for its stability".

DuckDB is an open-source column-oriented relational database management system that performs complex queries against large databases. DuckDB focuses on online analytical processing and aims to do analytics everywhere: on a laptop, on a phone, on the edge, in a browser, or in the cloud. This lowers the barrier for scientists and data engineers to perform complex analyses without heavy infrastructure or specialised knowledge.

The DuckDB Git Repository provides the tools for creating database systems that include columnar compressed storage, vectorised query processing, morsel-driven parallelism, and advanced testing. DuckDB is unique because it has no external dependencies and can hence be built with just a C++ compiler.

The success and the impact of DuckDB are impressive: the system is easy to use and, therefore, is used by millions of practitioners. The project has over six million downloads per month, is used at Facebook, Google, and Airbnb and the extensive adoption worldwide has inspired authors to write DuckDB books.

Mühleisen has put most of the intellectual property of DuckDB in an independent non-profit foundation that safeguards its long-term maintenance and development. The DuckDB Foundation's statutes ensure DuckDB remains open-source under the MIT license. Open source provides transparency and access, drives innovation and gives users control.

Mühleisen also created a commercial strategy in the form of MotherDuck that brings DuckDB to the cloud as a service. MotherDuck funds the further open-source development of DuckDB.



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HOLLANDSCHE MAATSCHAPPIJ
DER WETENSCHAPPEN

Mühleisen obtained several grants for his research, including NWO VENI and VIDI grants, and published 50 scientific papers. Mühleisen is talented in explaining scientific results, for example, in keynotes at several scientific meetings and in user conferences like DuckCon and the Data+AI summits. His courses on Data Engineering at Radboud University obtain the highest marks from the students.

Mühleisen's work is important because it bridges the gap between data science and database development, enabling new insights through powerful data processing tools, and changes the way data is used and analysed. The work of Mühleisen has put the Netherlands on the world map of analytics in databases.

Prof. dr. ir. S. (Stefano) Stramigioli, Professor of Advanced Robotics University of Twente

Prof. dr. R.C. (Remco) Veltkamp, Professor of Game and Media Technology Utrecht University

Prof. dr. J.N. (Joost) Kok, Vice Dean Faculty of Mathematics & Computer Science Eindhoven University of Technology, former Dean Faculty of Electrical Engineering, Mathematics and Computer Science University of Twente

The online jury meeting took place December 16, 2024, and was chaired by KHMW societal member mr. dr. N.U. (Artie) Ramsodit, and also attended by prof. dr. A.P. (Ad) IJzerman, KHMW board member and academic secretary for STEM and medicine.