

Ernst Denert Preis 2023

Eric Bodden, Yasemin Acar, Michael Felderer, Wilhelm Hasselbring, Paula Herber, Bernhard Rumpe

<https://fb-swt.gi.de/weiteres/ernst-denert-se-preis>

In its 32nd edition, the Ernst Denert Software Engineering Prize 2023 was awarded at the 2024 Software Engineering conference, for an outstanding contribution to software engineering by the Fachbereich Softwaretechnik of the GI, in cooperation with the Austrian Computer Society (OCG) and the the Swiss Informatics Society (SI). The Ernst Denert Software Engineering prize is awarded annually for outstanding work that was created in the field of methods, tools and processes of software development within the sphere of activity of the GI, OCG or SI. The prize is endowed with 5,000 euros.

The essential prerequisite for the award of the prize is the applicability and practical orientation of the work. The practical applicability must be demonstrated. Open source software or open data are explicitly desired.

The nominated candidates were able to present their work at the Software Engineering Conference SE 2024. The jury meeting and the award ceremony took place at the same conference.

The abstracts of the dissertations have been collected and are published as articles in the Software Engineering Trends available here. The winner for the year 2023 is:

Dr. Muhammad Numair Mansur

Dr. Mansur's dissertation "**Automatically Detecting and Mitigating Issues in Program Analyzers**" was supervised by Prof. Maria Christakis (who is now at Technische Universität Wien) at MPI-SWS and the University of Kaiserslautern-Landau. The dissertation addresses two major challenges in the area of static program analysis which currently impede the integration of static analysis tools into development processes. Many current analyzers are based on SMT and Datalog solvers, which themselves are complex tools that can be buggy. The dissertation presents novel, publicly available techniques that detected over 55 critical soundness bugs in these solvers. Secondly, the dissertation addresses the problem of balancing the soundness, precision and performance of static analyzers by automatically tailoring static analysis tools based on abstract interpretations to subparts of the code. The jury was impressed not only by the used methods and the strong evaluation but also by the clear practical impact. The approach has detected many previously unknown soundness bugs in widely used solvers. Another part of the dissertation is in active use at Amazon Web Services, where Mansur also works today.

These dissertations had been nominated as well:

- Dominik Helm: Modular Collaborative Program Analysis
- Sören Henning: Scalability Benchmarking of Cloud-Native Applications Applied to Event-Driven Microservices
- Tobias Hey: Automatische Wiederherstellung von Nachverfolgbarkeit zwischen Anforderungen und Quelltext
- Stefan Höppner: Empirical Assessment of Advantages and Disadvantages of Model Transformation Languages
- Anja Kleebaum: Continuous Rationale Management
- Thomas Lemberger: Towards Cooperative Software Verification with Test Generation and Formal Verification
- Malte Mues: The integration of Multi-Color Taint-Analysis with Dynamic Symbolic Execution for Java Web Application Security Analysis
- Felix Pauck: Cooperative Android App Analysis
- Tobias Runge: Correctness-by-Construction for Correct and Secure Software Systems
- Max Scheerer: Evaluating Architectural Safeguards for Uncertain AI Black-Box Components

All of these dissertations have been very good and their results deserve to be noticed in the respective subdomains of Software Engineering.

Abstracts of these dissertations, with the exception of Dr. Runge's, can be found in this issue of Software Technology Trends.

We would like to congratulate the current and all previous award winners, as well as all nominees! Moreover we wish to thank Prof. Ernst Denert, the founder of the award.

Information on nominations for the Ernst Denert Software Engineering Prize 2024 can be found on the website above.