

Citations for the Test-of-Time Award from 1994

Dexter Kozen

Chair of the 2014 LICS Test-of-Time Award Committee

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Two awards were made in 2014 to honor outstanding papers from the Ninth Annual IEEE Symposium on Logic in Computer Science (LICS '94) held in Paris, France, July 4-7, 1994.

Martin Hofmann and Thomas Streicher

The Groupoid Model Refutes Uniqueness of Identity Proofs

This paper opened a series of investigations leading to the development of homotopy type theory, an area of intense current research that touches on the very foundations of the field. The paper contained two key insights: first, that it follows from the rules of type theory that types have a groupoid structure; and second, that groupoids form a model of type theory. The results were quite surprising at the time and opened up a new front in the quest to understand the tradeoffs between intensional and extensional type theory. Although later revised and extended by the authors and others, the original insights were in the original LICS paper and were an essential forerunner of more recent developments on univalent foundations that led to homotopy type theory in its present form.

Dale Miller

A Multiple-Conclusion Meta-Logic

Jean-Yves Girard had introduced linear logic about seven years prior to the appearance of this paper and, in several subsequent papers, cemented its role as a quintessential, unifying logic. In this 1994 LICS paper, Miller showed that linear logic could also be used as a logical framework, providing means for the elegant, high-level representation of formal systems. Miller gave examples from the domains of logic (natural deduction) and programming languages (operational semantics, including effects). This appropriated linear logic for purposes of practical specifications of stateful and concurrent systems. This work has been quite influential over the years and even up to the present with the currently active area of behavioral types.

Award committee members: Thierry Coquand (University of Gothenburg), Dexter Kozen (chair, Cornell University), Leonid Libkin (University of Edinburgh), and Frank Pfenning (Carnegie Mellon University).

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