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date = "2021-05-17"

title = "Knuth Prize"

weight = 2

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Knuth Prize

The Donald E. Knuth Prize for outstanding contributions to the foundations of computer science is awarded for major research accomplishments and contributions to the foundations of computer science over an extended period of time. The Prize is awarded annually by the ACM Special Interest Group on Algorithms and Computation Theory (SIGACT) and the IEEE Technical Committee on the Mathematical Foundations of Computing (TCMF).

Nomination Procedure. Nominations for the 2025 prize are not yet open. Watch this space!

Criteria for Selection. The winner is selected by a Prize Committee consisting of six people appointed by the SIGACT and TCMF Chairs, see below for the composition of the committee.

Previous nominations made or updated in the last 5 years will be considered. Older nominations must be updated for consideration. Note that the Knuth Prize is awarded to a single individual each year. Nominations of groups of researchers will not be considered.

In selecting the Knuth Prize winner, the Committee pays particular attention to a *sustained record* of high-impact, seminal contributions to the foundations of computer science. The selection may also be based partly on educational accomplishments and contributions such as fundamental textbooks and high-quality students. The award is not given for service to the theoretical computer science community, but service may be included in the citation for a winner.

The 2024 Prize Committee. Noga Alon (Princeton U.), Edith Cohen (Chair, Google/Tel Aviv U.), David Eppstein (UC Irvine), Valerie King (U. of Victoria), Salil Vadhan (Harvard U.), and Moshe Vardi (Rice U.)

About the Award. The first Knuth Prize was presented at the 1996 ACM Symposium on Theory of Computing (STOC). Prize presentations now alternate between STOC in odd years and the IEEE Symposium on Foundations of Computer Science (FOCS) in even years. The winner is invited to give a lecture at the conference.

About Donald E. Knuth. The prize is named in honor and recognition of the extraordinary accomplishments of Prof. Donald Knuth, Emeritus at Stanford University. Prof. Knuth is best known for his ongoing multivolume series, *The Art of Computer Programming*, which has played a critical role in establishing and defining Computer Science as a rigorous, intellectual discipline. Prof. Knuth has also made fundamental contributions to the subfields of analysis of algorithms, compilers, string matching, term-rewriting systems, literate programming, and typography. His TeX and MF systems are widely accepted as standards for electronic typesetting. Prof. Knuth's work is distinguished by its integration of theoretical analyses and

practical, real-world concerns. In his work, theory and practice are not separate components of Computer Science but rather inexorably linked branches of the same whole.

Past Winners

- **2024**: Rajeev Alur
- **2023**: Éva Tardos
- **2022**: Noga Alon
- **2021**: Moshe Vardi
- **2020**: Cynthia Dwork
- **2019**: Avi Wigderson
- **2018**: Johan Håstad
- **2017**: Oded Goldreich
- **2016**: Noam Nisan
- **2015**: László Babai
- **2014**: Richard J. Lipton
- **2013**: Gary L. Miller
- **2012**: Leonid Levin
- **2011**: Ravi Kannan
- **2010**: David S. Johnson
- **2008**: Volker Strassen
- **2007**: Nancy Lynch
- **2005**: Mihalis Yannakakis
- **2003**: Miklos Ajtai
- **2002**: Christos Papadimitriou
- **2000**: Jeffrey D. Ullman
- **1999**: László Lovász
- **1997**: Leslie G. Valiant
- **1996**: Andrew C.-C. Yao