Best Reviews

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In the past, Computing Reviews named an annual best review & the last one was published in 2002. In order to highlight the excellent contributions of our reviewers to the publication, we decided to bring the Best Review back this year!

Throughout the year, our dedicated category editors rate each review on several criteria, including technical accuracy, summarization of the thesis and content of the item being reviewed, timeliness, and how interesting the review is overall. In addition, the category editors recommend items for highlight during the year. We used these rankings and highlight nominations to help us narrow down the list of finalists. We also considered various site metrics, including how many times the review was read and whether it was recommended by readers. Once the nominees were narrowed down, we sent each category editor a list of the reviews in his or her area. We asked each category editor to choose the review that was the most interesting and influential—one that we could hold up as an example of a best review. We ended up with 18 finalist reviews, which were evaluated by a small committee of category editors and our editor in chief. One best review was chosen, and our committee noted the excellence of all of the finalist reviews. In addition to the best review, our committee chose one review as an honorable mention: *Data-driven business decisions* by Fernando Berzal.

The 18 nominees for best review follow, and we hope you enjoy reading them as much as we enjoyed choosing them.

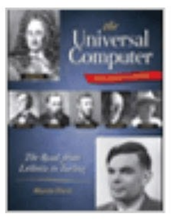
And now, for the winner...

The Best Review of 2012 is the review of *The universal computer* by George Hacken. According to one of the selection committee members, Hacken managed to transform a review of a pure theory of computation book to look like a review of a novel. He continued, "What could be a better representation of a Computing Reviews review than a review of a book about pure computing?"

Angela Condon
Managing Editor
Computing Reviews

Overall Best Review

The universal computer: the road from Leibniz to Turing. Davis, Martin. A. K. Peters, Ltd., Natick, MA, 2011, 240 pp., ISBN 1466505192.
K.2 History of Computing
Review written by George Hacken



Davis states in the last chapter of this book that the "connection between logic and computation has been a principal theme of this book." I've always been "in violent agreement" with those who assert that connection, but now my agreement is a hundredfold more informed. Examples constructed by the author and explained in this narrative history made many ultra-technical things clearer to me than they had ever been, including concepts such as Cantor's transfinite arithmetic and diagonalization process, certain specifics of the Hilbert program, Gödel numbers, and Turing quintuples and machines. The subtitle's "road from Leibniz to Turing" is traced in the chapter titles: "Leibniz's Dream," "Boole Turns Logic into Algebra," "Frege: From Breakthrough to Despair," "Cantor: Detour through Infinity," "Hilbert to the Rescue," "Gödel Upsets the Applecart," "Turing Conceives of the All-Purpose Computer," "Making the First Universal Computers," and "Beyond Leibniz's Dream."

The brief epilogue should not be missed, nor the preface and introduction. Those I'll call the protagonists—Leibniz, Boole, Frege, Cantor, Hilbert, Gödel, and the climactic hero Turing—are known to one extent or another from other sources that are largely disconnected. The book's thread also includes a set of appropriately placed and mostly indispensable giants in their own right who comprise the context and also the—forgive me—glue-logic of the main narrative and its branches: Aristotle, Pascal, Huygens, Newton, Kant, Gauss, Babbage, Lovelace, Russell, Kronecker, Dedekind, Weierstrass, Peano, Brouwer, Post, Weyl, Poincaré, von Neumann, Eckert, and others. All but the most hardheaded code-jockeys among us share some part of Leibniz's dream... more

About George Hacken:

Sputnik, the very first artificial satellite, was launched from Kazakhstan almost a half-century ago. This unexpected event sent shockwaves through the US's math-science public education establishment. George Hacken was in high school, and was lucky enough to pass the exam for a Sputnik-inspired extracurricular IBM/Joe Berg Foundation course in discrete math (whose textbook was Kemeny, Snell, and Thomson's Finite mathematics). As must be true of many CR readers, he never got over it, that is, over logic and discrete math.

He majored in physics (AB and PhD) at Columbia, where he stayed on as a researcher until 1976, and enjoyed with fellow students and post-docs the reflected glory of his thesis sponsor's 1975 Nobel Prize. ...

Read more about George ...

Best Reviews Nominees

Honorable Mention

Theory of Computation (F)
The nature of computation. Moore, Cristopher; and Mertens, Stephan. Oxford University Press, Inc., New York, NY, 2011, 1032 pp., ISBN 0199233217.
Review written by Hector Zenil

If there were an encyclopedia of computational complexity, this would be the first--and perhaps only necessary--volume. The book contains more than 900 pages and covers a large number of deeply related subjects ranging from discrete mathematics to quantum... more

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Hardware (B)
Reconfigurable networks-on-chip. Chen, Sao; Lan, Ying; Tsai, Wen; and Hu, Yu. Springer Publishing Company, Incorporated, New York, NY, 2011, 216 pp., ISBN 1441993401.
Review written by Jun Liu

As the density of very large-scale integration (VLSI) increases, on-chip communications are required to accommodate the data exchange between heterogeneous functional elements on a single die. Traditional bus-based communication schemes cannot keep up with the ever... more

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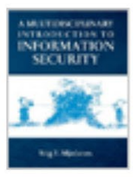

Computer Systems Organization (C)
A multidisciplinary introduction to information security. Mjølanes, Stig F. Chapman & Hall/CRC, Boca Raton, FL, 2011, 348 pp., ISBN 1420085905.
Review written by Patriciu Victor-Valeriu

Nowadays, the study of information security involves being aware of a broad range of domains, including mathematics, computer science, telecommunications, and social sciences. Information security focuses on how the information processed in computers and... more

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