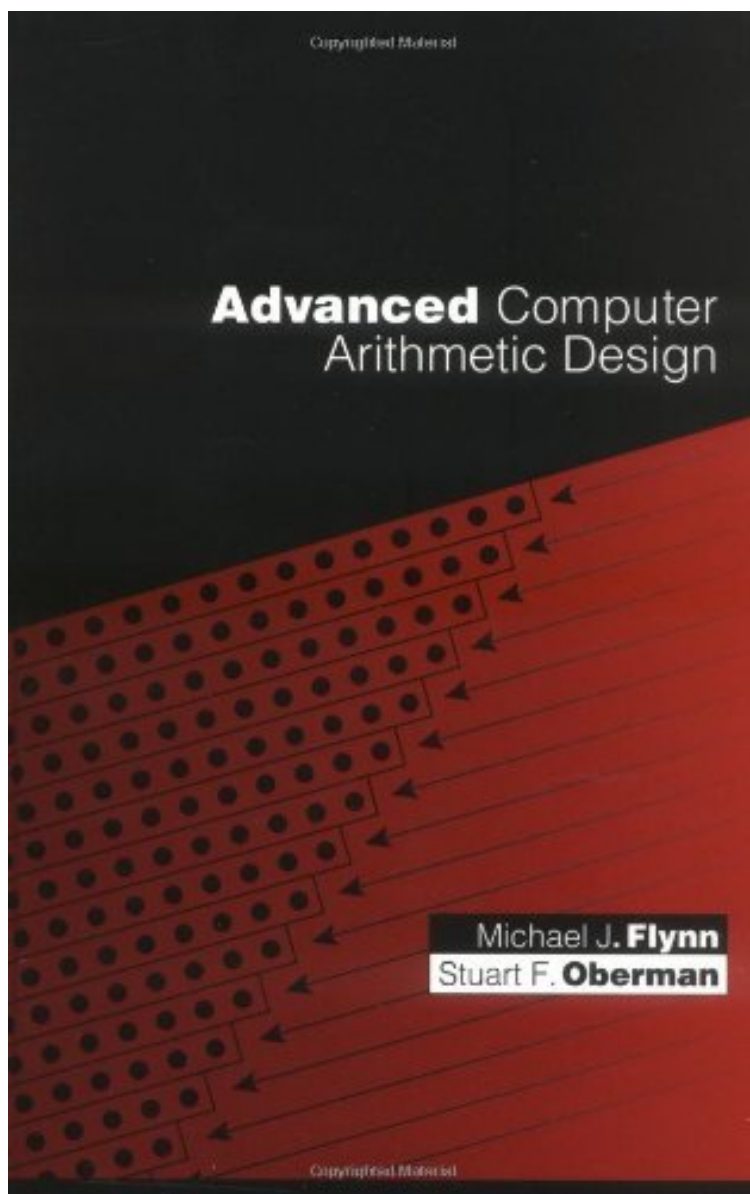


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# Advanced Computer Arithmetic Design



*Par Michael J. Flynn, Stuart F. Oberman*  
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computer designers and researchers in mind, this volume focuses on design, rather than on other aspects of computer arithmetic such as number systems, representation, or precision. Each chapter begins with a review of conventional design approaches, analyzes the possibilities for improvement, and presents new research that advances the state of the art. The authors present new data in these vital areas: \* Addition and the Ling adder \* Improvements to floating-point addition \* Encoding to reduce execution times for multiplication \*

The effects of technology scaling on multiplication \* Techniques for floating-point division \*

Approximation techniques for high-level functions such as square root, logarithms, and trigonometric functions \* Assessing cost performance of arithmetic units \* Clocking to increase computer operation frequency \* New implementation of continued fractions to the approximation of functions This volume presents the results of a decade's research in innovative and progressive design techniques. Covering all the most important research topics in the field, Advanced Computer Arithmetic Design is the most up-to-date and comprehensive treatment of new research currently available. Revue de presse "Drawing from a decade of research at Stanford University's SubNanosecond Arithmetic Processor...[the authors]...explain arithmetic design to computer designers and researchers." (SciTech Book News Vol. 25, No. 2 June 2001) Prsentation

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