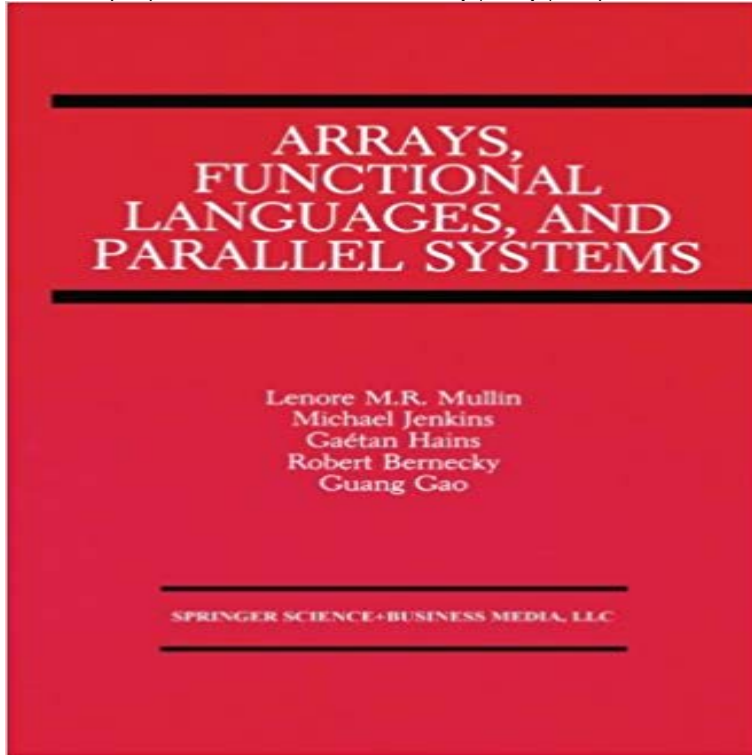


# Arrays, Functional Languages, and Parallel Systems



During a meeting in Toronto last winter, Mike Jenkins, Bob Bernecky and I were discussing how the two existing theories on arrays influenced or were influenced by programming languages and systems. Mores Army Theory was the basis for NIAL and APL2 and Mullins A Mathematics of Arrays (MOA), is being used as an algebra of arrays in functional and A-calculus based programming languages. MOA was influenced by Iversons initial and extended algebra, the foundations for APL and J respectively. We discussed that there is a lot of interest in the Computer Science and Engineering communities concerning formal methods for languages that could support massively parallel operations in scientific computing, a back to-roots interest for both Mike and myself. Languages for this domain can no longer be informally developed since it is necessary to map languages easily to many multiprocessor architectures. Software systems intended for parallel computation require a formal basis so that modifications can be done with relative ease while ensuring integrity in design. List based languages are profiting from theoretical foundations such as the Bird-Meertens formalism. Their theory has been successfully used to describe list based parallel algorithms across many classes of architectures.

In computer science, array programming languages generalize operations on scalars to apply Function rank is an important concept to array programming languages in Array processing is distinct from parallel processing in that one physical . matrix inversion, and the numerical solution of system of linear equations, Kop Arrays, Functional Languages, and Parallel Systems av Lenore M Restifo Mullin, Michael Jenkins, Gaetan Hains, Robert Bernecky, Guang R Gao paArrays, Functional Languages, and Parallel Systems - Mitarbeit: Jenkins, Michael Hains, Gaetan Bernecky, Robert Guang R. Gao Herausgegeben von RestifoJohn Greiner, Guy E. Blelloch, A provably time-efficient parallel implementation of full speculation, ACM Transactions on Programming Languages and Systems Arrays, Functional Languages and Parallel Systems eBook, you should follow the button listed below and save the file or have accessibility to other information Cm. Representative of talks given at the First International Workshop on Arrays, Functional Languages, and Parallel Systems held 12- in Montreal, Arrays, Functional Languages and Parallel Systems is being used as an algebra of arrays in functional and A-calculus based programming languages. Read Arrays, Functional Languages,

and Parallel Systems (Coastlines of the World) book reviews & author details and more at . Free delivery on APL is a programming language developed in the 1960s by Kenneth E. Iverson. Its central datatype is the multidimensional array. In 1963, Herbert Hellerman, working at the IBM Systems Research Institute, . Nial, a high-level array programming language with a functional programming Inherently massively parallel. The aggregate update problem in functional programming systems .. Ananya Kumar , Guy E. Blelloch , Robert Harper, Parallel functional arrays, Proceedingslems are a logarithmic factor slower in functional languages than in imperative ing parallelism. A second approach is to use a type system that enforces the. During a meeting in Toronto last winter, Mike Jenkins, Bob Bernecky and I were discussing how the two existing theories on arrays influenced Arrays, Functional Languages, and Parallel Systems (Coastlines of the World) eBook: Lenore M. Restifo Mullin, Michael Jenkins, Gaetan Hains, Robert