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	Nota di contenuto	Extended calculus of constructions as a specification language -- On the economy of doing Mathematics -- Pretty-printing: An exercise in functional programming -- True concurrency: Theory and practice -- Programming for behaviour -- Calculating a path algorithm -- Solving optimisation problems with catamorphisms -- A time-interval calculus -- Conservative fixpoint functions on a graph -- An algebraic construction of predicate transformers -- Upwards and downwards accumulations on trees -- Distributing a class of sequential programs

-- (Relational) programming laws in the boom hierarchy of types -- A logarithmic implementation of flexible arrays -- Designing arithmetic circuits by refinement in Ruby -- An operational semantics for the guarded command language -- Shorter paths to graph algorithms -- Logical specifications for functional programs -- Inorder traversal of a binary heap and its inversion in optimal time and space -- A calculus for predicative programming -- Derivation of a parallel matching algorithm -- Modular reasoning in an object-oriented refinement calculus -- An alternative derivation of a binary heap construction function -- A derivation of Huffman's algorithm.

| Sommario/riassunto | Not very long ago, the uninhibited use of mathematics in the development of software was regarded as something for academics alone. Today, there is moreand more interest from industry in formal methods based on mathematics. This interest has come from the success of a number of experiments on real industrial applications. Thus, there is not only a belief, but also evidence, that the study of computer programs as mathematical objects leads to more efficient methods for constructing them. The papers in this volume were presented at the Second International Conference on the Mathematics of Program Construction, held at St. Catherine's College, Oxford, June 29 - July 3, 1992. The conference was organized by the Oxford University Programming Research Group, and continued the theme set by the first - the use of crisp, clear mathematics in the discovery and design of algorithms. The second conference gives evidence of the ever-widening impact of precise mathematical methods in program development. There are papers applying mathematics not only to sequential programs but also to parallel and on-current applications, real-time and reactive systems, and to designs realised directly in hardware. The volume includes 5 invited papers and 19 contributed papers. |