

Algorithmic Languages and Calculi

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- the IFIP World Computer Congress, held every second year;
- open conferences;
- working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

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Algorithmic Languages and Calculi

**IFIP TC2 WG2.1 International Workshop
on Algorithmic Languages and Calculi
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PREFACE

This book contains the papers presented at the IFIP Working Conference on Algorithmic Languages and Calculi, held in Bisschofsheim, Alsace, on February 17–19, 1997. The conference was sponsored by IFIP Technical Committee 2 and organised in cooperation with Working Group 2.1 on Algorithmic Languages and Calculi, whose 50th meeting was held immediately afterwards.

For a number of years the inspiration of WG 2.1 has been to seek to develop a theory of algorithmics, comprising notations and calculi appropriate for rigorous yet elegant methods of program development. The following papers reflect this inspiration in a variety of ways. Together, they provide a state-of-the-art overview of ongoing research in the field, as well as its application to the production of practical software. There are derivations both of individual programs and classes of algorithms, a number of which are conducted in a point-free style using equational and inequational reasoning in a relational calculus. There are presentations of general program-transformation schemes, descriptions of implemented systems for carrying out transformations automatically (or semi-implemented systems for semi-automatic transformations), and explorations of the use of categorical concepts in the specification and design of general systems. Overall, the papers attest to continuing progress in our ability to improve conceptual clarity, to increase notational simplicity, and to tackle progressively harder problems. All this is made possible by striving for mathematical abstraction and unification.

The papers are recorded in the order they were presented at the conference, and are interleaved with edited transcripts of four short discussion sessions.

The editors are grateful to the members of the Program Committee and the reviewers for their careful work, and to the Organising Committee for providing a stimulating environment for the conference. They would also like to thank Doug Smith, chairman of WG 2.1, for providing much useful information, and Aileen Parlane of Chapman & Hall for general support in the preparation of this book.

Amsterdam, April 1997

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