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This Book





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Advances in Computer Science and Engineering: Texts: Volume 9

The Human Face of Computing

- Emest Hemingway

as loyal as a book. 99

Edited by: Cristian S Calude (University of Auckland, New Zealand)

About This Book

Computation is ubiquitous: modern life would be inconceivable without it.

This book includes conversations with famous computer scientists, mathematicians and physicists who have made essential contributions to the development of computing and its applications. The reader will have access to the inner thinking of these influential people and will learn about their education and career paths, who and what influenced them, where they find inspiration, the ways they choose their problems, their methods of work, how they cope with failures and successes, their attitude towards mistakes and competition, how they relax, how they see the future, and much more.

The personalities featured in the book come from all parts of the world and represent the hottest fields in computing. They include Dines Bjørner, Erol Gelenbe, David Harel, Juris Hartmanis, Kurt Mehlhorn, Arto Salomaa, Joseph Sifakis, Joseph F Traub and Ian H Witten, who discuss the theoretical aspects of computer science. Interviews with Jon Borwein, Douglas Bridges, Gregory Chaitin, Françoise Chatelin and Jozef Gruska cover mathematical modelling. Discussions with Rod Downey, Giuseppe Longo, Yuri Manin, Solomon Marcus, Mioara Mugur-Schachter and Grzegorz Rozenberg focus on scientific applications. The arrival of the internet has seen computing intrude into almost all aspects of our lives, and Brian E Carpenter, Eric Goles, Yuri Gurevich, Hermann Maurer, Moshe Y Vardi and Reinhard Wilhelm explore the social aspects of computing.

These experts are not only high achievers in very specialized subjects, but also down-to-earth people who are not afraid of talking about life as it is, rather than as we would like it to be. The aim of the book is not only to inform and entertain, but also to

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motivate and stimulate.

The conversations are presented in jargon-free language suitable for a general audience, which is occasionally peppered with technical details for more specialized readers.

Contents:

• Computing Science:

- Formal Methods (Dines Bjørner)
- Computer System and Network Performance Analysis (Erol Gelenbe)
- From Theoretical Computer Science to Behavioural Programming, Biology and Smell (David Harel)
- Computational Complexity (Juris Hartmanis)
- From Theory to LEDA and Algorithm Engineering (Kurt Mehlhorn)
- Theoretical Computer Science (Arto Salomaa)
- Concurrent Systems Specification and Verification (Joseph Sifakis)
- Information-Based Complexity (Joseph F Traub)
- A Stroll Through the Gardens of Computer Science (Ian H Witten)

• Computing in Biology, Mathematics and Physics:

- Experimental Mathematics (Jon Borwein)
- Constructive Mathematics (Douglas Bridges)
- Mathematics, Physics, Biology and Philosophy (Gregory Chaitin)
- Qualitative Computing (Françoise Chatelin)
- Computability and Algorithmic Information Theory (Rod Downey)
- Informatics, Physics and Mathematics (Jozef Gruska)
- Computations and Natural Sciences (Giuseppe Longo)
- My Life Is Not a Conveyor Belt (Yuri Manin)
- Mathematical Analysis, Languages and Fractals (Solomon Marcus)
- Information, Quantum Mechanics and Probabilities (Mioara Mugur-Schachter)
- Natural Computing (Grzegorz Rozenberg)

Social Aspects of Computing:

- Internet (Brian E Carpenter)
- Systems, Art and CONICYT (Eric Goles)
- o Mathematics, Computer Science and Life (Yuri Gurevich)
- Computing and Thinking about the Future (Hermann Maurer)
- o Computing, Research Ethics and the Surveillance State (Moshe Y Vardi)
- Compiler Construction and Dagstuhl (Reinhard Wilhelm)

Readership: Readers interested in the lives and motivations of eminent computer scientists.