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Rainbow of Computer Science

Dedicated to Hermann Maurer
on the Occasion of His 70th Birthday

Springer

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Hermann Maurer (picture by Sean Maguire, 2008)

Preface

This book is dedicated to *Hermann Maurer* on the occasion of his 70th birthday in April 2011. The title word *Rainbow* reflects the beauty and variety of the achievements of this outstanding scientist, as well as the diversity and depth of current computer science. Hermann is a true Renaissance man, polymath, *Homo Universalis*, but he still has kept most of his activities on his native Austrian soil. He has been able to combine an exceptionally high level in scientific work with remarkable successes in high administrative and organizational positions. In computer science he has combined profound theory with high-level and unique applications. The high admiration that Hermann enjoys in the scientific community all over the world was witnessed by the enthusiastic response we received to our request to contribute to this book.

Hermann's studies took place in Vienna, where he also had his first positions. After that he was an assistant and associate professor for computer science at the University of Calgary during 1966–1971 and a full professor for applied computer science at the University of Karlsruhe, 1971–1977. Then in 1978 he assumed his main academic position, a full professorship at the Graz University of Technology, where he was also the dean of studies and the dean of the new school of computer science. He has also had long-term visiting positions at SMU (Dallas), University of Brasilia (Brazil), the University of Waterloo and the University of Auckland where he was also an honorary research fellow. Moreover, he has been an adjunct professor at Denver University, advisor to the University of Malaysia at Kuching (UNIMAS) since 1998 and a visiting researcher at Edith Cowan University (Perth, Australia). This list does not do any justice to Hermann's work because usually his stay at a university is not a normal visit but brings forward important innovations.

Hermann's career as a researcher and teacher is outstanding. He is the author of some 20 scientific books and approximately 650 papers in various journals and conference proceedings. He has supervised roughly 400 MSc theses and some 50 PhD theses. He has visited extensively universities and research institutes all over the world, and given invited or keynote lectures at numerous international conferences. Hermann's early pioneering research was in compiler design, formal languages, automata, algorithms and data-structures. His current main research and project areas are networked multimedia/hypermedia systems; electronic publishing and applications to university life, exhibitions and museums; Web-based learning environments; languages and their applications; data structures and their efficient use; telematic services, computer networks, computer-supported new media, dynamic symbolic language, social implications of computers, techniques to fight plagiarism and computers in science fiction. Recently Hermann has been an outspoken critic of some data-mining activities on the Web.

Hermann is or has been the chairman or a member of steering and program committees of numerous international conferences. Apart from his work on the editorial boards of many journals, Hermann founded one of the very first electronic journals, *Journal of Universal Computer Science*. He still continues to be the editor-in-chief of this very successful journal.

To show Hermann's qualities in leadership and administration, we list the following facts.

Hermann was the project manager of a number of pioneering multimillion-dollar undertakings. They include a patent for optical storage device, the development of a color-graphic microcomputer (MUPID), an electronic teaching experiment COSTOC, multi-media projects such as *Images of Austria* (Expo'92 and Expo'93), various electronic publishing projects such as *PC Library, Geothek and Brockhaus Multimedial*. He was responsible for the development of the first second-generation Web-based information system Hyperwave and a modern net-based teaching platform. Hermann organized the multimedia part of a number of museum projects, including Ars Electronica Center (Linz, Austria), the Papa Tongarewa (Wellington, New Zealand), as well as the Odyseeum (Cologne) opened in 2009. He also participated in or headed a number of EU projects.

Hermann was the director of the Research Institute for Applied Information Processing of the Austrian Computer Society for 1983–1998, the chair or vice-chair of the Institute for Information Systems and Computer Media since 1988, the director of the Institute for Hypermedia Systems of Joanneum Research for 1987–2006, the director of the Austrian Web Application Center for 1997–2000, the co-founder and chairman of the board of the Hyperwave AG Munich 1997–2005, the vice-chairman of the same company since then, as well as the founder and scientific advisor of the first research center on knowledge management in Austria. Hermann's enthusiastic leadership often brings forward remarkable results and innovations. Among the editors of this book, the expression *Hermann quality* refers to a high level of excellence.

It is no wonder that Hermann is one of the most decorated computer scientists. He has received a number of awards, among them the Prize for Merits for Information Processing in Austria, the "Enter-Prize" (a play of words with "enterprise") of the Styrian Chamber of Commerce in 1999, the Integrata-Prize (for Human Software) in 2000, and the "AACE Fellowship Award" of the Association for the Advancement of Computing in Education in 2003. Hermann became a foreign member of the Finnish Academy of Sciences in 1996 and a member of the Academia Europaea in 2000, where he was elected chairman of the section "Informatics" in April 2009. His invigorating work in this position is already visible in many ways, for instance, exceptionally good and useful Web pages have been created for the whole academy. He is a life-long honorary member of MCCA, Vienna, and of the Computer Engineering Society, Graz. In 2001 he was awarded the "Austrian Cross of Honours for Arts and Science Class I," as well as the "Large Medal of Honour of the Province of Styria." He received the Honorary Doctorate of the Polytechnical University of St. Petersburg in 1991,

of the University Karlsruhe, Germany in 2002, and of the University of Calgary in 2007.

Apart from science, Hermann being *Homo Universalis* is clearly visible in his extra-curricula life and hobbies. Desire to explore the world around us is one of his basic characteristics. Space does not permit us to describe here in any detail Hermann's hobbies or family life. The latter includes trips all over the world, as well as various other activities with his wife Ushi, children and grandchildren. Hermann's friends have the opportunity to learn every year interesting facts about far-away lands and cultures, reading his well-known Christmas letters.

Hermann is a successful writer of science fiction. His novels dwell mostly in the world of computers: future possibilities such as teleportation, but also the dramatic consequences if the administration of the Web falls into wrong hands. Hermann has always been very sportive—mountain climbing, scuba diving and hiking belonging to his hobbies.

Each of the three editors of this book has a warm and close friendship with Hermann, developed over many years. In particular, Cris is grateful to him for being a role model and mentor, Grzegorz for so many years of reliable friendship, and Arto for the happy and productive MSW decade around 1980. We wish Hermann continuing success and satisfaction in science, leadership and life in general, in the years to come.

January 2011

Cristian S. Calude
Grzegorz Rozenberg
Arto Salomaa

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