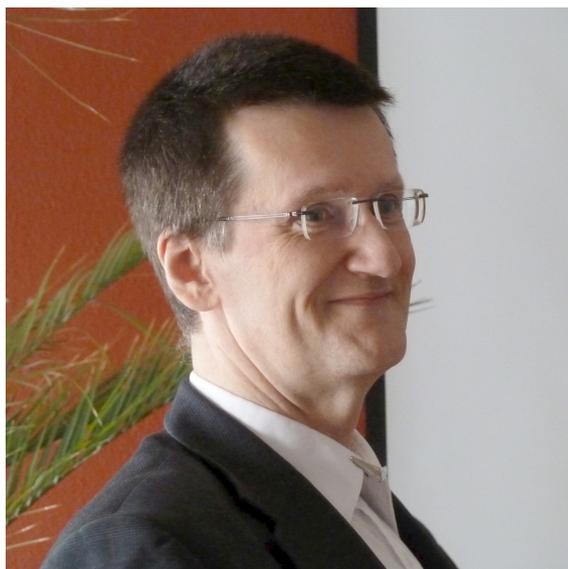


PREFACE

These first two issues of Volume 21 of the *Journal of Automata, Languages, and Combinatorics* are dedicated to Professor Dr. Rudolf Freund on the occasion of his 60th birthday on January 15, 2016.

They contain articles on recent research in the theory of automata, formal languages, descriptive complexity, biologically inspired (parallel) computations, infinite words, and related topics. The contributing authors – leading researchers, colleagues, and friends – honour Rudi Freund with papers in fields where he has been and still is very active.



Rudi Freund has been educated in Computer Science at the two main universities in Vienna, Austria, namely *Universität Wien* and *Technische Universität Wien*. He obtained the graduate degree in 1980 at the TU Wien. Also there, he achieved the doctoral degree in 1982 with the thesis *N-dimensionale Sprachen*. Further, he pursued teaching certification in Mathematics and Physics which he obtained in 1986. Around 1993, he spent one year as a visiting professor at the Otto von Guericke Universität Magdeburg, Germany, where he not only participated in research but also gave lectures in Theoretical Computer Science for undergraduate students. He finished his habilitation with the thesis *Array grammars – Theory and Applications* at the TU Wien in 1995. He continued his academic career as a senior lecturer for

Theoretical Computer Science at the TU Wien, where he later became a professor of Computer Science.

As a scientist, he is particularly known for his work on almost all aspects of *Membrane Computing (P Systems)* for which he is one of the world-wide leading experts and trailblazers. Further main areas of his research are *Molecular Computing, Array and Graph Grammars, Cooperating Distributed Grammar Systems*, and *Formal Languages* in general. Until now, Rudi Freund published approximately 200 scientific papers and proceedings. He is a well-known speaker at international conferences and universities in many countries. Moreover, he has organized the *Sixth International Workshop on Membrane Computing (WMC 2005)* and the *Seventh International Conference on Unconventional Computing (UC 2008)*.

In addition, Rudi Freund renders outstanding organizing services within the German speaking community. In 1992, he was one of the founding members of the special



Rudi at the 4th NCMA
(Fribourg, Switzerland, 2012)

interest group on *Automata and Formal Languages* of the German Association of Informatics (Gesellschaft für Informatik). From 2006 to 2009, he served as a member of its Steering Committee. The *Theorietag "Automaten und Formale Sprachen"* which is the annual meeting of the special interest group was organized by Rudi Freund in the years 2000 and 2006. The *Theorietag 2020* is already firmly scheduled to take place in Wien. It is worth mentioning that Rudi is the only person who attended all the 25 editions of this series so far and, moreover, gave a talk at each of them. In 2009, he and the other members of the Steering Committee of the special interest group started a new series of annual workshops on *Non-Classical Models of Automata and Applications (NCMA)* that is now well established and whose eighth edition took place this year in Debrecen, Hungary, where he was one of the invited speakers. From

the very beginning, Rudi Freund was a co-editor of the NCMA proceedings which are published by the Austrian Computer Society.

Beside his research activities, Rudi Freund took responsibility in the administration at the Technische Universität Wien. He is a longtime member and deputy member of the Senate where he took the chair in 2002. After the foundation of the Faculty of Computer Science in 2004, he became its first study dean. He held this position until 2009. Last but not least, he has supervised several students and PhD theses.

Dear Professor Freund, dear Rudi, we wish you many more Happy Birthdays, success, joy, and health!

Giessen, August 2016

Markus Holzer, Martin Kutrib, Bianca Truthe