# Foreword

This issue is dedicated to Professor Kumbakonam Govindarajan Subramanian (K.G., for his friends and collaborators) on the occasion of his 70th birthday anniversary.

K.G. is an Indian Mathematician and Theoretical Computer scientist born on July 6, 1948. He obtained his PhD in Theoretical Computer Science from the University of Madras, India in 1980 and worked at Madras Christian College, Chennai, India, where he was the head of the Department of Mathematics in the period 2001-2006, and Dean of Sciences in the period 2003-2006.

In his over 40 years of teaching and research experience, K.G. has published, alone or in cooperation with researchers from several countries, around 100 research papers in the area of Theoretical Computer Science (in particular in the area of Automata and Formal Language Theory) and about 35 papers in the broad area of Complex Function Theory (in particular in the area of univalent functions). He has participated in 12 research projects in India and Malaysia. He was invited at universities in France, Germany, Spain, Vietnam, Malaysia, China, Japan. He edited or co-edited several special issues of journals and collective volumes. He was a member of the program committees and steering committees of numerous international conferences.

In the early years, the work of K.G. was in the area of array grammars for picture languages consisting of rectangular arrays or hexagonal arrays, resulting in joint publications with his thesis supervisor Prof. Rani Siromoney, a leading theoretical computer scientist in India, and with his colleagues. He has also done work with his students on grammatical inference and formal language based cryptosystems. Subsequently, when he was a visiting researcher in Spain, due to his interaction with other researchers, he got involved in the area of membrane computing, especially in array-rewriting P systems, resulting in a joint publication with Rodica Ceterchi, Gheorghe Păun and Madhu Mutyam, which was the first work linking membrane computing and picture languages. This work was instrumental in several variants of array P systems being proposed, such as array P systems with parallel rewriting or contextual array rewriting rules. K.G. has also worked on developing string and array grammar models based on the operation of splicing which was introduced by Tom Head in the study of DNA recombination behaviour. In the recent past, his work was focused on studying properties of words with reference to a recently introduced concept (by Alexandru Mateescu and his collaborators), known as Parikh matrix of a word, intended to provide numerical information on certain subsequences of words. Besides his work in topics related to Computer Science, he has also done joint work on problems about the theory of univalent functions in the

field of Complex Analysis, with a basic work on uniformly convex functions with negative coefficients.

K.G. was and is always very open to dialogue and collaboration. He has an extensive knowledge and a profound intuition which he shares with the utmost generosity of spirit. He has done joint research with numerous scholars both in India and abroad. This is why some of his fellow colleagues have brought together their work in this anniversary issue, to celebrate a life of hard work and dedication.

This volume contains papers related to many Computer Science topics which were addressed by K.G. in his research: array languages, membrane computing, splicing systems, automata and language theory (rewriting systems in general), DNA tiles self-assembly, combinatorics on words, graph theory, cryptography.

On behalf of all authors in this volume, we thank K.G. for his friendship and scientific generosity and we wish him Happy Birthday!

The editors
Rodica Ceterchi, Bucharest, Romania
Gheorghe Păun, Curtea de Argeş, Romania
Linqiang Pan, Wuhan, China
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