## Acta Universitatis Sapientiae

## Informatica

Volume 4, Number 1, 2012

Sapientia Hungarian University of Transylvania Scientia Publishing House



 $\underset{(1962-2012)}{\textbf{Antal Bege}}$ 

Our colleague, friend, editor-in-chief of Acta Universitatis Sapientiae, associate professor Antal Bege passed away unexpectedly on March 22, 2012. He was only 49.

After finishing his studies in Mathematics at Babeş-Bolyai University in Cluj he became a teacher in his former school in Miercurea Ciuc. After the regime change in 1989 he joined the Faculty of Mathematics and Computer Science, at Babeş-Bolyai University. He worked there for almost two decades, then went over to Sapientia Hungarian University of Transylvania, Department of Mathematics and Informatics in Târgu-Mureş in 2008. This is where he became the head of the department and the editor-in-chief of the academic journal Acta Universitatis Sapientiae. Naturally, he did his best in all these qualities.

Among his research interests we can mention Number Theory (arithmetical functions), Nonlinear Analysis and Discrete Mathematics. He published 13 textbooks and monographs both in Hungarian and Romanian, as well as a lot of scientific papers.

He was extremely evenhanded person, appreciated by all his colleagues and students, a man of poise and an eternal stayer. With a terrible feeling of pain and loss, we say goodbye to our friend. We shall treasure his memory.

Editorial Board

## Contents

T. Gregorics
Concept of the abstract program7
L. László
Sum of squares representation for the Böttcher-Wenzel
biquadratic form
V. Sargsyan
Counting $(k, l)$ -sumsets in groups of a prime order3
N. Fogarasi, K. Tornai, J. Levendovszky  A novel Hopfield neural network approach for minimizing total weighted tardiness of jobs scheduled on identical machines
Z. Király, P. Kovács Efficient implementations of minimum-cost flow algorithms 67
P. Burcsi Analysis of the picture cube puzzle119
A. Iványi, J. E. Schoenfield  Deciding football sequences