



# Vladimir Gerdt: A Computer Algebra Enthusiast

Bruno Buchberger

Received: 29 September 2021 / Accepted: 29 September 2021 / Published online: 19 November 2022  
© The Author(s), under exclusive licence to Springer Nature Switzerland AG 2022

A couple of years after finishing my Ph.D., in 1970/71, I spent a year at the Joint Institute for Nuclear Research in Dubna (JINR), north of Moscow. At that time, symbolic computation was in its infancy. Anyway, I remember that a few physicists there wanted to have an “extension of FORTRAN” that would make it possible to do computations with formal terms in addition to numerical computation. However, these desires did not yet result in any usable piece of software.

In fact, at the beginning, I did not conceive my Gröbner bases theory and algorithm as part of “symbolic computation” and did not even notice that my work could have impact on what the physicists at JINR were dreaming of. I had my first contact with the beginning community of symbolic computation/computer algebra only around 1976. Only ten years later, in 1987, at the EUROCAL conference in Leipzig, organized by Wolfgang Lassner, I noticed that, meanwhile, some physicists and mathematicians at JINR had started to work on solving differential equations symbolically by applying algorithms for computation modulo polynomial ideals. This was the first time when I met Volodya (Vladimir) Gerdt who was full of enthusiasm for the new field of “computer algebra” and was the driving force and later the leader of the computer algebra group at JINR. Since, through my personal experience in Dubna, I understood the very special atmosphere of mathematicians working at hotspots for physics like JINR and CERN and I also appreciated the fundamental importance attributed to mathematics in Russia, we became very good friends already at our first meeting in Leipzig.

This friendship expanded and lasted all the years until his too-early death this year. I was always impressed by his enormous enthusiasm for computer algebra and, in particular, by his ability to judge which mathematical, in particular algorithmic, questions have relevance for physics and to build a bridge between the community of physicists and the community of computer algebra/symbolic computation researchers. By his numerous papers, contributions to conferences, and also management efforts for organizing international events and projects, he is surely one of the pioneers of symbolics in the area of differential equations. It was always a great joy and inspiration to meet Volodya at various occasions like conferences or as a visitor at RISC. He more and more became one of the most prominent personalities in computer algebra, notably in the field of solving differential equations symbolically.

---

B. Buchberger (✉)  
Research Institute for Symbolic Computation, Johannes Kepler University, Linz, Austria  
e-mail: bruno.buchberger@jku.at

I am deeply affected by his sudden death, which probably came completely unexpected for all of us. I will miss him as a scientific partner but also as an always good-humored friend who spread a positive and motivating atmosphere around him.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.