Obituary

Ryszard S. Michalski
1937–2007

On November 23, 2007 at the Batowicki Cemetery in Krakow we bade farewell to Ryszard S. Michalski, Foreign Member of the Polish Academy of Sciences, Fellow of AAAI, PRC Chaired Professor of Computational Sciences and Director of the Machine Learning and Inference Laboratory at the George Mason University in Fairfax, Virginia, USA and an Affiliate Scientist at the Institute of Computer Science in Warsaw.

Born on May 7, 1937 in Kalusz near Lvov, Ryszard S. Michalski studied in 1954–1959 at the Universities of Technology in Krakow and Warsaw, obtaining an equivalent of B.S. in Electrical Engineering. Then he continued his studies in Russia, obtaining in 1961 the degree of M.S. in Computer Science at the Polytechnic Institute of St. Petersburg.

In the period 1962–1970 Ryszard S. Michalski worked at the Institute of Automation of the Polish Academy of Sciences in Warsaw. His first major project was the development (in collaboration with Jacek Karpiński) of an early successful learning system for recognizing handwritten alpha-numeric characters. In 1961 Ryszard S. Michalski defended his Ph.D. thesis in Computer Science at the Silesian University of Technology in Gliwice.

After emigrating in 1970 to the USA, Dr. Michalski worked at the renowned Computer Science Department at the University of Illinois at Urbana-Champaign, initially as a Research Professor, and then as a Full Professor of Computer Science and Medical Information Science, and the Director of Artificial Intelligence Laboratory. In early 1970 ties he invented the algorithm AQ, which subsequently became a basis for many machine learning programs, and remains an exciting topic for modern machine learning research. Developing a new branch of Computer Science – machine learning – Ryszard S. Michalski was always keen to demonstrate practical applicability of this tool. Collaborating with James Sinclair, a plant pathologist at the University of Illinois, he developed the first agricultural expert system, and the first practical expert system that learned its decision rules from examples (1977). Dr. Michalski originated also research on constructive induction and conceptual clustering; developed a computational theory of inductive learning; introduced variable-precision logic; and co-developed a computational theory of human plausible reasoning.

In 1988 Ryszard S. Michalski moved with his research group to the George Mason University in Fairfax, Virginia, where he was offered the position of Planning Research Corporation (PRC) Chaired Professor of Information Technology. In 2002, he became the PRC Professor of Computational Sciences at George Mason University. He was also appointed the Director of Machine Learning and Inference Laboratory (MLI) – a group that pioneered research in machine learning for many years. In particular, Ryszard S. Michalski developed the inferential theory of learning (ITL), which views every form of learning as a process of increasing the agent's knowledge through an application of knowledge operators (transmutations). Recently, he introduced a form of non-Darwinian evolutionary computation, called Learnable Evolution Model (LEM), in which an evolutionary process is guided by machine learning. As a co-founder of the "Journal of Machine Learning" and a co-organizer of the main conferences on machine learning, Dr. Michalski is perceived as one of the fathers of this important branch of Computer Science.

Ryszard S. Michalski paid also great attention to popularization and teaching of computational sciences. The computer codes ILLAN, EMERALD and iAQ, developed at the MLI for this purpose, were installed at several museums of technology in the USA and used for teaching courses at many universities. During his own lectures Dr. Michalski used an original method of adaptive learning, encouraging his students for creativity and self-motivated studies.

After leaving Poland, Ryszard S. Michalski always maintained close ties with the scientific community in his home land. In particular, he always felt at home at the Polish Academy of Sciences, that elected him its Foreign Member in 2000. Working part time at the Institute of Computer Science in Warsaw, Dr. Michalski shared his experience with the staff of this institute, attended conferences organized by the ICS PAS and invited many colleagues for research stays at the GMU. Also at present a group of young Polish adepts of science works at the MLI and one of Ryszard Michalski's pupils Janusz Wojtusiak leads the laboratory.

Ryszard S. Michalski took advantage of his high esteem to improve the image of Poland and Polish science in the United States. Acknowledging this activity, the President of Poland decorated him in 2007 with the Officer's Cross of the Order of Merit of the Republic of Poland.

After Ryszard S. Michalski passed away on the 20th September 2007 in Fairfax, we lost a distinguished scientist, an excellent teacher, and a patriot deeply engaged in the matters of his country. He will remain in our memory.

Sulejówek, the 10th of December 2007

Adam Borkowski