

Brief Bio of Prof. George Luger



George Luger has been a Professor in the University of New Mexico (UNM) Computer Science Department since 1979. His two master's degrees are in pure and applied mathematics. He received his PhD from the University of Pennsylvania in 1973, with a dissertation focusing on the computational modeling of human problem solving performance in the tradition of Allen Newell and Herbert Simon. Prof. Luger had a five year postdoctoral research appointment at the Department of Artificial Intelligence of the University of Edinburgh in Scotland. In Edinburgh, he worked on several early expert systems, participated in development and testing of the Prolog computer language, and continued his research in the computational modeling of human problem solving performance.

At the University of New Mexico, Prof. Luger has also been made a Professor in the Psychology and Linguistics Departments, reflecting his interdisciplinary research and teaching in these areas. His most recent National Science Foundation (NSF) supported research is in diagnostic reasoning, where he has developed stochastic models, mostly in an extended form of Bayesian Belief Networks. His book *Cognitive Science* was published by Academic Press in 1994. His AI book, *Artificial Intelligence: Structures and Strategies for Complex Problem Solving* (Addison-Wesley 2005) is now into its fifth edition.

Prof. Luger has been funded by NSF for research in stochastic languages and modeling. To date this research has produced several papers describing their results, including the creation of an object-oriented stochastic modeling language and formalizing a stochastic lambda calculus. Prof. Luger has been funded by the Department of Energy through Sandia National Laboratories, in a project called Albatross, to develop a glider that stays airborne by recognizing and using air currents. The Flight Gear software is used for aircraft simulation while a genetic algorithm is used to discover and use air currents. Prof. Luger has also been funded by NASA to assist in the development of TOFU, a program to recognize and interpret space phenomena, such as sun spots and solar flares. This research began in 2001. Prof. Luger is also involved in several other projects and research activities in AI.