



A handwritten signature in dark ink, which appears to read "K. S. Fu". The signature is stylized with a large, sweeping initial "K" and a cursive "Fu".

King-Sun Fu

1930–1985

By M. E. Van Valkenburg

King-sun Fu, W. M. Goss Distinguished Professor of Engineering at Purdue University and pioneer and universally acclaimed leader in the field of syntactic pattern recognition, died of a sudden heart attack on April 29, 1985, in Washington, D.C. His death came while he was attending a National Research Council dinner celebrating the National Science Foundation's creation of six new engineering research centers. Professor Fu was director of one of the centers—the new Intelligent Manufacturing Center at Purdue University.

King-sun Fu was born in Nanking, China, on October 2, 1930. He received a B.S. from the National Taiwan University in 1953, an M.S. from the University of Toronto in 1955, and a Ph.D. from the University of Illinois in 1959, all in electrical engineering.

From the beginning, Professor Fu saw no conflict between basic research and its applications. He believed that if the basic research were sufficiently deep and powerful, it would solve many difficult practical problems. Conversely, he believed that important practical problems were not to be successfully solved by ad hoc methods without involving a deep theoretical foundation.

While still in Taiwan, King-sun Fu worked in industry, first at the Taiwan Power Company and later with the Chinese Broadcasting Company. After he received his doctorate, he

made the difficult decision to gain further experience by joining the Boeing Airplane Company as a research engineer in 1959. The desire to teach never left him, however, and during the spring of 1960 Professor Fu taught a course at Seattle University. The following fall, he accepted an appointment at Purdue University.

Shortly after Dr. Fu's arrival at Purdue, his department head, the late Thomas F. Jones, suggested that Dr. Fu spend a semester at the Research Laboratory of Electronics at the Massachusetts Institute of Technology. That laboratory experience changed the path of his professional life because it marked the initiation of Professor Fu's interest in pattern recognition. On his return to Purdue, Dr. Fu's interests expanded to such topics as machine intelligence, image processing, computer vision, and expert system development.

Dr. Fu was known for his innovative ideas and his practical applications of them—for example, the identification and classification of crops from remotely sensed multisectorial data, the detection of irradiated chromosomes, and the computerization of a blood cell classification system. He also developed X-ray techniques for the automatic diagnosis of abnormalities of lungs, heart, liver, and pancreas. Other of his X-ray applications involved the identification and classification of fingerprints. Even more recently, Dr. Fu's methods have been applied to integrated circuit chip and metal surface inspections, which are both important to industrial automation.

At the time of his death, Professor Fu had supervised seventy-five Ph.D. students who now hold positions of leadership in industry and academia. In addition, he published more than three hundred papers and four books.

Throughout his professional career, King-sun Fu received numerous awards and much recognition. The most important of these are the American Society for Engineering Education Senior Research Award (1981), the Institute of Electrical and Electronics Engineers (IEEE) Education Medal (1982), and the Harry Goode Memorial Award from the

American Federation of Information Processing Societies (1982). King-sun Fu was elected to the National Academy of Engineering in 1976.

Dr. Fu was the founding editor of the journal *IEEE Transactions on Pattern Analysis and Machine Intelligence*. In addition, he served his profession in many other ways—for example, as vice-president for publications of the IEEE Computer Society and as the first president of the International Association for Pattern Recognition. From 1965 until his death, he held more than forty-five volunteer positions in various organizations—mostly those of the IEEE. He was also a visiting professor at Stanford University as a Guggenheim fellow and a visiting professor at the University of California at Berkeley on two different occasions.

Dr. Fu traveled widely, especially to assist his colleagues in Taiwan. He was frequently a member of American delegations to international conferences in such places as Moscow, Warsaw, Copenhagen, and Tokyo.

King-sun met his wife, Viola, while they were students at the University of Illinois. Thereafter, Viola was a constant companion throughout his lifetime of adventures. They had two sons, Francis and Thomas, and a daughter, June.

King-sun Fu never declined requests for help from his colleagues and students, whether day or night. He never asked for credit for himself. His greatness as a researcher, teacher, and person continues to shine through.