

**IN MEMORIAM LOTFI A. ZADEH**

(February 4, 1921 Baku, Azerbaijan – September 6, 2017, CA, US)

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Lotfi A. Zadeh passed away on September 6, 2017.

The breadth of Lotfi A. Zadeh’s contributions to science and engineering is tremendous, being reflected by the huge number of papers, books, and international journals that deal with such varied topics as the Z-transform, discrete-time systems, optimality, logics, control theory, set theory, and machine learning.

Several key notions in Zadeh’s thinking that are worth mentioning, namely *optimality*, *uncertainty*, *reasoning*, and *meaning*; also, the concept of *discrete variables* and its tension with the concept of *continuum* plays a central part in his work.

Lotfi A. Zadeh has been a system theorist, a computer scientist, a physicist, and an engineer. He published the vast majority of his papers as single author, but he has also worked together with Ragazzini (sampled systems, Z-transform), R. Bellman (optimization theory), C.A. Desoer (linear systems, state-space approach), K. Miller (prediction and detection), and a few other scientists. About Zadeh’s contribution to the modern signal processing, the article published on September 11, 2017, by New York Times, mentions:

*“As a professor at Columbia, working alongside John Ragazzini, Mr. Zadeh developed a mathematical method called Z-transformations, which became a standard means of processing digital signals inside computers and other equipment.”*

Decision making, optimality, discrete systems, and probability were central notions in Zadeh’s work during the 1949–1965 period. These notions, to which uncertainty concepts and reasoning added after 1965, were recurrent in Zadeh’s more recent work. One can see direct connections from his early works to his establishment of fuzzy logic and fuzzy systems; several issues he approached in the early papers and the questions he asked found at least partial answers in the frames of fuzzy logic and soft computing.

Zadeh has been a friend of Romanian science, which he prized publicly several times. Zadeh dedicated a single paper to the memory of a scientist – namely, to Grigore C. Moisil, whom he named his friend and supporter. The topic he chose for the paper, approximate reasoning, was cherished by both of them.

Several papers have been dedicated to him during his life, for example [1–3]. Zadeh himself wrote a contribution on his work [4]. Obituaries with brief data on Zadeh’s life have already been published, for example [5–6]. The list of his paper is (still) at [7].

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