HORIA-NICOLAI TEODORESCU

(A tribute in honor of his 50th birthday)

Personal Reflections on a Joyful Occasion

When I learnt about the publication of this Special Issue of the *Computer Science Journal of Moldova,* I felt an urge to participate in it in some way. Normally, given enough time, I would have written a full article on my research and dedicate it to the distinguished colleague, Professor Horia-Nicolai Teodorescu, whose 50^{th} birthday is the joyful occasion for publishing this Special Issue. Since I have not been able to do that due to limited time, I want to take this opportunity to make at least a few relevant comments.

50^{th} birthday is of course an important milestone in the life of every person. It is a good time to rejoice and reflect on one's accomplishments. As is generally recognized, the accomplishments of Professor Teodorescu are very impressive, and I wish to briefly comment on them from my personal perspective.

It is fair to say that Professor Teodorescu has contributed in a significant way to virtually every area pertaining to the broad field of intelligent systems. I use here the term "intelligent systems" to refer to human-made systems that are capable of achieving highly complex tasks in human-like, intelligent way. The qualifier "human-like" in this characterization is important since it distinguishes the area of intelligent systems from the current mainstream in the classical field of artificial intelligence. A significant distinction between these two fields is the development and utilization of the various tools of soft computing in the field of intelligence systems, and their virtual rejection within the field of classical artificial intelligence.

As is well known, Professor Teodorescu has contributed to the various components of soft computing. Among his most visible contributions are: (i) introducing fuzzy chaotic systems and developing their methodology as well as some applications; (ii) developing hardware implementations of fuzzy chaotic systems; (iii) developing an algebraic approach to neuro-fuzzy systems; (iv) studying computational complexity of fuzzy systems; (v) introducing the concept of pseudo-basis decomposition of fuzzy numbers; (vi) developing a powerful methodology based on fuzzy nonlinear dynamics for signal analysis; (viii) conceiving and developing a new approach to pattern-oriented filtering and control; and (ix) introducing the concepts of a chaotic measurement and a chaotic neuron, and developing various sensors based on these concepts.

In addition to contributing many basic ideas to the emerging field of intelligent systems, Professor Teodorescu has pursued numerous applications in the areas of engineering, medicine, and some human-related sciences, including economics. Moreover, he has exercised for many years leadership within the field of intelligent systems by initiating important publications and organizing timely conferences. For all his con-

tributions, he deserves our congratulations and best wishes for many more years of vital creativity. Happy Birthday, Horia !

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The celebration of the 50th anniversary of Mr. Horia Nicolai Teodorescu, Professor and Corresponding Member of the Romanian Academy, is the proper occasion to wish him a long and beautiful life as well as a many further outstanding achievements.

It is my pleasure as much as honor to express my feelings regarding the personality and the prodigious scientific work of our eminent colleague. His noteworthy scientific acts are the result of the mixture between talent and hard work, on the one hand and, on the other hand, intelligence and the veritable art of encountering solution to various issues. Hardly could any other motto suit him better than old Latin maxim: " Labor und virtus".

On account on his work, Professor H.N.Teodorescu appears as conspicuous scientist, enjoying a sound reputation inside the national as well as international scientific community.

Main contribution:

- The first approach ever to chaotic fuzzy and neuronal fuzzy models as models on economic process (numerous books and review articles, 1991-2001);
- The first emphasis on the likelihood that chaotic dynamics may occur in human and machine as well as expert and decident decisional systems (1993);
- New methods and models of applying fuzzy logic and the neural and fuzzy systems theory to the decision-making theory as well as to increasing the complexity of the supporting systems in decision-making process;

- Contribution to applying the non-liniar dynamic systems theory to economic process modeling;

- New models of creativity based on fuzzy logic and neural systems

Always synchronized with the scientific pulse of the moment, the Professor participated in many national and international congresses and conferences, as either a member of the scientific committee, vice-president, or president.

His works amounts to 20 volumes (authorship or co-authorship) and numbers of studies and articles published in specialized reviews.

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No doubt the presentation personality of Professor H.N. Teodorescu's personality and work proves far from exhaustive. To praise true personalities is but a noble duty.

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