



Obituary Edwin Lughofer (1972–2023)

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On June 26, 2023 the scientific community lost Dr. Edwin Lughofer, one of the pioneers in Evolving Systems research as well as an Associate Editor from the very beginning of the journal *Evolving Systems* (2010). He was a passionate researcher and also a very kind and gentle person who impressed his colleagues with his humanity and enthusiasm.

Edwin has made a significant contribution to the theory of evolving fuzzy- and neuro-fuzzy systems. We only mention his latest chapter in the “Handbook of Computer Learning

and Intelligence” (2022) which is a seminal work that shows not only his contribution to the area, but also his hard and devoted work to leave to the next generation of researchers a comprehensive review of the development of evolving systems in the last 20 years, including over 300 references.

Edwin Lughofer was born in 1972 in Ried im Innkreis, Austria. He obtained his Master degree (Diplom-Ingenieur) in Technical Mathematics from the Johannes Kepler University Linz (JKU) in 1997 and joined in the same year the Fuzzy Logic Laboratorium Linz (FLLL)-Hagenberg of Prof. Erich Peter Klement (today part of the Institute of Mathematical Methods in Medicine and Data-Based Systems (M3DM), JKU). It turned out that Hagenberg became Edwin’s workplace and base hub for his project activities and research endeavors while advancing from a project assistant to an internationally renowned key researcher recognized in his fields of expertise.

Initially focusing on applied projects in the fields of signal and image processing for quality inspection he soon became an expert for fuzzy systems and their applications. His PhD thesis „Data-driven incremental learning of Takagi–Sugeno fuzzy models” completed in 2005 was an in-depth study of learning in data-driven fuzzy systems. Edwin was one of the first to recognize the power of the Takagi–Sugeno model as a tool for system decomposition and real-time learning of the structure and parameters of nonlinear models. He quickly

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established himself as a capable and visionary researcher in the fields of evolving fuzzy systems, active learning, predictive maintenance, and hybrid modeling of complex systems.

He was actively involved in a large number of innovative research projects sponsored by the EU or by national institutions for research funding such as the Austrian Science Fund or the Austrian Research Promotion Agency. The list of distinguished company partners within the funded projects included, e.g., Sony, AVL List, Voestalpine steel, Engel or Brau-Union. He became a principal investigator in projects who also helped to create innovative research ideas in the cooperations with the two centers of competence (Software Competence Center Hagenberg and Linz Center of Mechatronics), but also in several bi- and multilateral cooperations with colleagues at the institute, in Austria and abroad.

Edwin is the author of the monograph “Evolving Fuzzy Systems—Methodologies, Advanced Concepts and Applications” published by Springer in 2011, and co-editor of several collected volumes and special issues of international scientific journals. His list of publications includes over 100 articles in peer-reviewed journals and more than 100 papers in edited volumes and Conference Proceedings. Google Scholar lists more than 9000 citations of his publications (including five journal papers with over 200 citations each). Also, for several contributions to international conferences he received a Best Paper Award. Considering that all these activities were made possible only by third party and research funds, his overall achievements are even more remarkable.

In addition, Edwin served not only as a member of the Editorial Board of the *Evolving Systems* journal, but also of other renowned scientific journals like, e.g., *IEEE Transactions on Fuzzy Systems*, *Information Sciences* and *Information Fusion*. He was also actively cooperating in the organization of scientific conferences (mainly in the field of *Evolving Fuzzy Systems*), most notably as General Chair of the *IEEE Conference on Evolving and Adaptive Intelligent Systems (IEEE EAIS)* in Linz in 2014.

Edwin’s close colleagues and research partners feel indebted, privileged and inspired by his deep knowledge in machine learning, evolving and complex systems, his work ethics and his kindness. His significant pioneering contributions to the field of evolving intelligence in the last couple of decades influenced many younger scholars who remember the inspiring discussions with Edwin, his insightful (key-note) talks at evolving systems conferences, and his politeness and respectful manners.

Completely unexpectedly, Edwin Lughofer passed away in the early morning of June 26, 2023, after a longer serious illness he had endured in quiet patience.

The evolving systems community will greatly miss him. May he rest in peace.

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