
EDITORIAL

Baton change, another beginning at 25

YAN JIN

Department of Aerospace & Mechanical Engineering, University of Southern California, Los Angeles, California, USA

It is a pleasure and responsibility for me to have been appointed to be the new Editor in Chief of the *AI EDAM* journal. I am taking the baton from Professor David Brown, the previous Editor, as the fourth runner of the Journal's pursuit for the highest standards of publishing and for nurturing *AI EDAM* research in the world. Coincidentally, this volume marks the 25th anniversary of the Journal. At this time of another beginning, I thank my predecessors for their dedication and contributions to the Journal: Professor Clive Dym, who founded it and put it on a very sound footing; Professor William Birmingham, who took it over from Clive and continued and modernized the Journal; and Professor Dave Brown, whose hard work and creativity in the past 10 years has brought it to the next level with a variety of important topics covered by the Journal Special Issues. I also thank the members of the Editorial Board, the guest editors, the reviewers, the authors, and our Senior Project Managing Editor, Nancy BriggsShearer, for making *AI EDAM* a significant and prominent journal in our research community.

When Clive started *AI EDAM* 25 years ago, AI was a hot topic and the public had high hopes that computers would be able to act as humans and even replace humans in a general sense. This overly high expectation was caused partly by the term AI because intelligence is such a synonym for human. Twenty-five years later, computers still cannot act as or replace humans and are not even close. However, AI as a group of technologies has reached so many EDAM areas as powerful tools and solutions. *AI EDAM* undoubtedly served as a significant and effective forum for this intellectually challenging development process. The 25-year evolution of *AI EDAM* can be characterized by the changes of EDAM domains and AI technologies and by the relations between AI and EDAM. The early work only dealt with relatively small, simple, and single domain EDAM problems, but the recent focus has moved to tackle large-scale, complex, and multidisciplinary ones. AI technologies have also evolved from single isolated systems and relatively simple search and pattern matching algorithms to multiagent, massive data-mining, and human in the loop

AI technologies. Furthermore, although the early work simply took AI as possible solutions to EDAM problems, the recent research attempts to use AI as a tool to help develop better understandings of EDAM problems and human design intelligence. It is truly exciting to think about that with advanced AI computing technologies we may develop some kind of new science or “physics” of design intelligence in certain EDAM domains that can work in concert with the real physics of the world for building future engineered systems.

The last 25 years for *AI EDAM* can be marked with one word: quality. With the great effort of the three Editors Emeritus of the Journal, *AI EDAM* has earned its reputation for publishing only high quality papers. Sustaining such high quality given the current “pressure to publish” and “impact factor” push requires not only editorial guards but also the effort of the whole *AI EDAM* community. What constitutes the quality of an *AI EDAM* journal paper? In addition to the usual technical and editorial requirements such as no technical flaws and good style and organization, the archival value can be an important factor. There are two important aspects of archival value. First, the reported research is built on archived results of existing research. Citing others' research results and clarifying relations with the existing work make a paper more archivable. Second, the reported results must advance our understanding of AI, EDAM, or their relations, so that others can build their research on your results. This requires your results to be sufficiently general and validated so that they are useful and trustable. By emphasizing the archival value, I hope our authors will pay more attention to others' *AI EDAM* research and aim at developing better understanding and knowledge with validated results.

The 25th anniversary may not be as grand as the 20th or 30th. However, if you call it a quarter of a century, that sounds more remarkable. Thus, the first issue of the anniversary volume starts with the editorial and reflection comments from members of the Editorial Board. The topics of those comments range from what we have done to where we should go, the statistics of the Journal, and publication quality issues. Hope you will enjoy reading these insightful, refreshing, and challenging comments.

The remainder of the issue has five articles with a variety of topics. Anders Haug's article is concerned with the acquisi-

Reprint requests to: Yan Jin, Department of Aerospace & Mechanical Engineering, University of Southern California, 3650 McClintock Avenue, OHE-430, Los Angeles, CA 90089-1453, USA. E-mail: aiedam@usc.edu

tion and use of tacit knowledge in configuration projects. Wim Zeiler and Perica Savanovic's article addresses the pedagogical issues that they identified through applying professional workshops to multidisciplinary master building design projects. The article by Felfernig, Schubert, and Zehentner introduces a divide and conquer based diagnosis algorithm that identifies minimal sets of faulty constraints in an over-constrained problem. Zamenopoulos' article is concerned with design intentionality and aims to develop a mathematical theory for it. Finally, Ehrich and Haymaker, in their practicum article, propose an integrated design process to support design interaction for maximizing the overall value of design teams.

The baton has been passed on smoothly without any incident, and we are off to a good beginning at 25. A strong edi-

torial team has been assembled to carry the *AI EDAM* banner. Professor Mary Lou Maher has agreed to stay on as an Associate Editor to cover the Australia and North America regions. We also have three new Associate Editors: Prof. Amaresh Chakrabarti for Asia, Prof. Ashok Goel for North America, and Prof. Kristina Shea for Europe. A new *AI EDAM* website (<http://aiedam.usc.edu>) has been established to support the submission of papers and reviews and participation in discussion forums. I hope it will function as a useful platform for our *AI EDAM* community. I am very much looking forward to working with all of the Associate Editors, Editorial Board members, the Senior Project Managing Editor, the Cambridge University Press team, and all of the authors and reviewers to continue to advance *AI EDAM* to the next level.