

## AI EDAM 25th anniversary

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TETSUO TOMIYAMA

Department of BioMechanical Engineering, Delft University of Technology, Delft, The Netherlands

When *AI EDAM* started 25 years ago, AI was a buzz word and it was expected to revolutionize the way engineering design, analysis, and manufacturing (EDAM) were conducted.

It did not revolutionize EDAM unfortunately. There was no visible landmark over the past 25 years at least in the EDAM areas. Instead of such “gold medals,” what we now see is numerous steady stepwise improvements that AI technologies in a broad sense brought about. Just look at commercial CAD software. You can easily specify “rules” that define relations among dimensions, shapes, components, or assemblies. These rules maintain and satisfy important constraints even if their dimensions are changed. Think about a genetic algorithm based program that finds optimums out of a zillion combinations in a reasonable time. Not only in EDAM but also in a related area such as management science, the concepts of knowledge and knowledge management are commonsense nowadays.

AI has penetrated into various branches of information and knowledge processing as an essential technology. The collective effort of the community related to *AI EDAM* made these achievements possible.

When compared with other areas, EDAM seems to be an area in which AI was exceptionally successful, perhaps be-

cause EDAM is information and knowledge intensive. For instance, every single decision during design is based on information and knowledge. However, one can also find so many situations that are not information and knowledge intensive. Often these are called “experience based,” but this simply means no rationality in design decision (because only reference is past experience). The whole design becomes therefore a “gut-based design.” *AI EDAM* (as a field, not as a journal) has been a field in which we worked hard to convert undocumented, uncoded, unformalized knowledge into more documented, codified, formalized knowledge, so that all these experience based decisions can become “knowledge based” or in other words more rational and scientific.

I regard *AI EDAM*'s 25 years of history as the sum of the community's collective effort toward more rational and scientific EDAM. There were numerous articles published in this Journal that reported such countless stepwise improvements. We have not seen Nobel Prize laureates in this community. We will not at least in the near future, because essentially what *AI EDAM* (as a field) does is piecewise conversion of undocumented, uncoded, unformalized knowledge into more documented, codified, formalized knowledge that can only be performed stepwise.