

Editorial

Celebrating 25 Years of the IEEE TRANSACTIONS ON FUZZY SYSTEMS



Jim Bezdek (Founding Editor) writes:

BOB MARKS INVITED me to join the IEEE Neural Networks Council (NNC) in the summer of 1991. I attended the next meeting of the Executive Committee of the NNC, and this group encouraged me to do two things: find an IEEE TRANSACTIONS; and initiate an IEEE conference in our field. Both of these tasks were familiar to me, since I had founded the *International Journal of Approximate Reasoning* (Elsevier, 1987); and I had chaired non-IEEE conferences for North American Fuzzy Information Processing Society (NAFIPS) (1982) and International Fuzzy Systems Association (1984, 1989).

The conference came first: It was held in San Diego in 1992. I chaired it and named it the “IEEE International Conference on Fuzzy Systems (FUZZ-IEEE).” The journal took more time, since the approval process for a new IEEE TRANSACTIONS was lengthy, and also because there was a lot of resistance among many members of the IEEE to acknowledge our field in any way. But eventually, with much help from the founding

committee (Lotfi Zadeh, Ron Yager, Enrique Ruspini, Henri Prade, and Didier Dubois), the IEEE TRANSACTIONS ON FUZZY SYSTEMS (this journal, TFS) was founded. The initial issue dated February 1993 contained my introductory editorial titled “Fuzzy models—What are they, and why?” *IEEE Trans. Fuzzy Syst.*, vol. 1, no. 1, pp. 1–6. The first four years, 1993–1996, were full of turmoil because some members of the ruling body for the NNC (at that time, 2 members from each of 12 IEEE society sponsors), wanted to disband the NNC and take over all of our transactions (and I might add, split up our very healthy treasury due to our very successful major conferences (the International Joint Conference on Neural Networks, ICEC, and FUZZ-IEEE, which were combined into the World Congress in Computational Intelligence (WCCI) in 1994)).

In my six years as an Editor-in-Chief (EiC) of TFS, all papers were still physically processed by surface mail, and I think we were getting about 250 papers/years by 1998. The turnaround time to a decision was typically nine months, often stretching to well over a year. But we did publish some really great papers, some of which are now regarded as seminal articles in their fields. My very rusty memory is that TFS had 600 bimonthly pages in 1993, and we were up to something like 1800 monthly pages by 1998.

At that time, and up to the present, there was a term limit of six years for all EiCs, so I served from 1993 to 1998. When it was time to replace me, I recommended that the next EiC be Jim Keller, my friend and colleague at the University of Missouri. The IEEE Administrative Committee agreed; so, JimK was appointed in the fall of 1998 as the second EiC of TFS. Jim and I have appeared in many photos. The one we used as the first transition photo is a picture of us on the FV Lady Simpson II, a long line fishing vessel owned and captained by Pat Simpson’s father. Jim and I spent a night on it, and we worked as deck hands the next day. This is a picture of us in our fishing gear.



First transition picture, February 1999: Bezdek hands off to Keller.

Jim Keller (Second Editor-in-Chief) writes:

Yeah, I am always following The Bez. Jim got me involved in the fuzzy systems scientific communities, first NAFIPS and then IEEE. I was an Associate Editor (AE) for the TFS since its inception and then jumped at the chance to take the reins in 1999. It was my “dream job” and I have been heavily involved in publication management ever since, both in CIS (where I am in my second go-around as the Vice-President of publications) and in the IEEE Technical Activities as a member of the Periodicals Committee and the Periodicals Review and Advisory Committee (PRAC) for six years.

When I took over TFS, authors still sent six hard copies of their manuscripts by surface mail to the EiC. I kept two, and mailed four to the chosen AE. The AE kept one and mailed the remaining three to referees, many times without checking ahead of time for agreement. You can imagine the high potential for things literally getting lost in the mail. Communication was slow and spotty; record keeping was essentially manual. Submission to publication times reflected this communication channel. Yikes! How did we survive? I made two upgrades during my stint as an EiC in this new millennium. First, I replaced the surface mail by e-mail correspondence. At least we were able to eliminate the slow and costly surface mail routes that are particularly cumbersome for an area that has such an international community. However, record keeping was still manual, relying on me and my administrative assistant to keep track of “who, what, where, and when.”

I ended up having to go through two PRAC reviews during my tenure. Computing statistics for the journal and its competitors was a painful process. Thank goodness that the IEEE got a



The second TFS transition picture, 2004; Keller to Pal with Bezdek channeling. Notice how the former EiCs are smiling.

working version of Manuscript Central (MC) up and running near the end of my six years. Once I saw that it would indeed help in the management of the journal, I did the initial work to move TFS to that manuscript management system, even though I would not benefit from it. This was my gift to my successor and buddy, Nik Pal, who was appointed to be EiC in the fall of 2004 to begin service in 2005. I suspect Nik will have something to say about whether my “gift” to him was as complete as I thought it was. In any event, I got to hang around by being elected VP-Pubs for CIS in 2005. It was a heady time of growth for CIS.

We decided that it would be interesting to build complete transition pictures. Here is the transition to Nik, taken in 2004 at Bez’s house when Nik was on leave at the University of West Florida (UWF) and I was spending a sabbatical on Pensacola Beach (er, also at UWF).

Nikhil Pal (Third Editor-in-Chief) writes:

Serving as the Editor of TFS was a dream job for me too. As mentioned by Jim (Keller), he handed over to me an almost complete MC system for TFS, yet it needed a bit of “tuning,” which I did along with Jim and Ms. Sonal Parikh of the IEEE. Before I took up the charge of TFS, I had some experience in working with MC as an Associate Editor for the IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS: B; I knew several issues with MC and that helped me a lot. Although, officially my appointment as the Editor began on January 1, 2005, I started handling papers in August 2004. As I recall, TFS went live onto MC in the last week of August 2004 and I handled the first paper through MC on August 28, 2004. This was a great moment with excitement and joy.

With MC, the job of an Editor became significantly simpler as MC was recording all relevant data. Monitoring progress of manuscripts became easier. As the EiC, I could see how responsive each AE was on the manuscripts assigned to him/her, and take the necessary steps to expedite reviews, if needed (this was not always a pleasant job!). But nothing comes free, the expectation from authors went up rapidly—They wanted to get reviews on their manuscripts as quickly as possible. Yet, the



The third TFS transition picture: Note how the former EICs are happy, while CT's face is heavily burdened.

journey was going smoothly till sometime in 2007, when we were asked to migrate to a higher version (V 3.*) of MC. This was much more challenging than switching to MC from the manual system. For this, a replica site was created. A few AEs and I formed a team to play with various options of the new system. It is needless to mention that we faced many issues. For example, the system would not generate the proof and would give a message “*Proof File not found - Please re-upload the files and try again,*” when everything was done as per the guidelines. Even with all our best efforts to fix problems, after we migrated, it became a nightmare for me for quite some time. For example, the PDF of a manuscript, submitted in V 1.8, after migration would not be visible! This is just one of many. I take this opportunity to thank Sonal for bearing with me and helping with tons of such issues, which were of great concerns to authors as well. In spite of all these, overall this was an enjoyable experience.

During my tenure, I reintroduced the Short Paper category and introduced a new category called Application Paper. I also opted for inclusion of the final accepted versions of the manuscripts (before copy-editing) into the early-access list and as a result, a fully-citable version of every accepted manuscript appeared online within a very short time after acceptance. Consequently, as expected, the submission to e-publication time reduced significantly (in Q3 of 2010, the average time from submission to e-publication was 44.4 weeks). The impact factor also became healthy. I finished my third term as the Editor in 2010, and transferred the baton to the able hands of my good friend, Chin-Teng (CT) Lin. Following my predecessors, the third transition picture is included. However, I was not out of the publication activities for long. In 2013, I became the Vice-President for CIS Publications and served in that capacity for two terms. These four years were also quite eventful for TFS, which I leave for some other occasion.

Chin-Teng Lin (Fourth Editor-in-Chief) writes:

It is my tremendous honor to have served as the EiC of TFS, although the role carried a great load as well. Even though, it was a challenging job to maintain the high quality that my predecessors, Jim Bezdek, Jim Keller, and Nikhil Pal, established and to advance TFS to the next level of excellence. I deeply enjoyed the whole experience and implemented many updates in different areas.

In running TFS, I was immersed in unending contact with AEs, referees, and authors. For satisfying all three groups' expectations, several measures were taken. Monitoring the review process and sending out review reminders is one measure I did regularly in those years. Apart from regular reminder emails, I have cooperated with ScholarOne colleagues to modify the system for shortening process time after a review conducted at the end of 2012. After that, the manuscript processing time was reduced from approximately 90–120 days to 55–90 days. Moreover, AE recommendation options were modified in ScholarOne MC as well. Removing major revision and early rejection during the revised stage helped to provide final decisions in a reasonable time and alleviate referees' burdens. Also, I remembered that ScholarOne implemented the iThenticate crosscheck system in 2014. Since then, not a few manuscripts were returned without going through the review process because of the high percentage of overlapping with exiting publications. Earlier in 2015, a new type, “Survey Papers,” was established, which enabled authors to define their submission with the proper type if their manuscripts were survey or tutorial articles discussing recent progress in a broader perspective and accurately assessing the limits of existing theories.

In 2011, when I took over the TFS, the 2010 impact factor dropped to 2.683. In addition, I found that some TFS papers



The fourth TFS transition picture: Note that CT has a big smile on his face here.

did not present their findings with respect to the state of the art. So two major actions were taken to promote TFS: Action 1—Creation of a new TFS website to provide new functions, paper classification, real-time statistic information, and connection to the social network; and Action 2—Advertisement of published papers by emailing table of contents of every new published issue to all TFS authors and reviewers. Also with the help of shorter manuscript processing time, the number of manuscript submissions increased rapidly to over 1000 in 2016. With these major factors, 2015 TFS received the impact factor of 6.701, which made TFS the second journal among all IEEE TRANSACTIONS in terms of IF ranking. The impact factor has moved to 7.7 in 2016, and the journal remains as No. 9 among journals in electrical and electronic engineering by journal impact factor, and No. 4 among journals in computer science—artificial intelligence. Discounting self-citations the impact factor has gone up to 7.1 in 2016. Other bibliometrics indicating quality are also up, for example, the Article Influence score has increased to 2.05, and the Eigenfactor score has increased to 0.02.

I finished my third term as EiC in 2016, and Jonathan (Jon) Garibaldi was appointed as my successor effective from January 1, 2017. Following my predecessors, the fourth transition picture is included. I take this opportunity to thank Jon and Clair for helping me during the transition period. Having been devoted to the research of fuzzy logic for over 30 years, I am very lucky to have the opportunity to provide academic service to this society by serving as the EiC of the IEEE TFS for six years, which was an enjoyable and unforgettable period in my career.

Jonathan (Jon) Garibaldi (Fifth and Incumbent Editor-in-Chief) adds:

First, just to echo all the previous EiCs by stating that I feel tremendously honored to be serving our wonderful scientific community by serving as an EiC for our flagship journal. The previous EiCs have collectively done a fantastic job of establishing the journal, building its reputation as the leading journal in the field, working with IEEE to implement a high-quality online submission system, and increasing its scientific impact, which leaves me little to do other than just “keeping the ship sailing in the right direction!”

As stated above, the role also carries both a high workload and great responsibility, not to mention the very significant challenge of trying to keep everyone happy (AEs, reviewers, and particularly, submitting authors) while maintaining the very high standards of publication. The high quality and scientifically exclusive nature of TFS is, of course, both a blessing and a curse. Much time as an EiC is spent explaining to disappointed authors that their paper cannot be accepted despite their (often well founded) pleas that they could improve the paper by making changes. But, we have many submissions and need to keep a continual watch on the backlog of accepted papers so as to keep “sub-2-pub” times swift; which means only accepting the very best submissions—current acceptance rates are around only 15% (roughly 150 papers published per year out of approximately 1000 submissions). In an idealized world, all authors want a high-quality journal with high impact, fast and accurate reviewing, quick publication times—and their papers

always being accepted—but, of course, these competing factors cannot all be simultaneously satisfied!

Naturally, I also have plans for further development of the journal as, good though it is, there is always scope for improvement. As impact factors have become firmly established, the scientific community as a whole is now looking at other bibliometric measures, such as Article Influence and Eigenfactor to collectively provide a richer and more sophisticated view of journal influence. As CT mentions above, TFS is currently performing well across each of these; but we need to be aware of this landscape, aiming to keep these indicators healthy by publishing the very best papers that really do have high influence and impact, both within our field and beyond. Nik Pal mentions the introduction of the Application Paper category—I feel this excellent initiative still needs further work to ensure that such papers get appropriate review and that a wider spectrum of really interesting and novel applications of fuzzy systems in the real world appear in TFS.

So, please bear with me as an EiC, as I try my best to further enhance TFS. Of course, when your paper gets rejected, you may ask “why!?”; but, please keep in mind my comments above, and please do continue to support the journal by submitting your best work for consideration. If the community continues to support the journal, then it has wonderful future prospects for the next 25 years!

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