

Introduction to ACM TIST

It is our great pleasure to present this inaugural issue of the *ACM Transactions on Intelligent Systems and Technology* (ACM TIST). In today's world, systems empowered with artificial intelligence (AI) technology have truly touched on every aspect of our lives, ranging from Web search to smart phones, from social networking and media systems to computational sustainability. Looking back, the field of AI has undergone tremendous changes throughout the years since its inception in the 1950s. Today's AI application has grown from the standalone, single systems in the early days to ones that are more pervasive, integrated, embedded, and multidisciplinary. AI systems are becoming more integrated, with more than one technology operating and interacting therein as well as becoming more embedded by acting as key components of a larger, overall system or systems. Increasingly, systems and technologies are data driven, which complements the traditional top-down design methodologies in AI. Intelligent systems are also stepping out of the traditional computer science realm as evidenced by explosive research in areas such as bioinformatics and biomedicine, intelligent education systems, and intelligent transportation systems.

In light of the technology and societal changes just mentioned, we see a tremendous demand for opening up a new archival journal at a top venue to document high-impact works in the area of intelligent systems and technology. As we state in our editorial charter published at <http://tist.acm.org>, *ACM Transactions on Intelligent Systems and Technology* is a new scholarly journal that publishes the highest quality articles on intelligent systems, applicable algorithms, and technology with a multidisciplinary perspective. An intelligent system is one that uses artificial intelligence techniques to offer important services (e.g., as a component of a larger system) that allow integrated systems to perceive, reason, learn, and act intelligently in the real world. The journal welcomes articles that report on the integration of artificial intelligence technology with various subareas of computer science as well as with other branches of science and engineering. The journal welcomes innovative high-impact articles on deployed or emerging intelligent systems and technology with solid evaluation or evidence of success on a variety of topics.

In a field where there are already many top conferences every year disseminating volumes of good papers, do we still need to have another journal? In his *Communications of ACM* article "Conferences vs. journals in computing research", Moshe Y. Vardi [2009] ponders whether computer science as a field has now reached a maturity such that we should see more journal publications as a way to disseminate our results. He asks, "Why are we the only discipline driving on the conference side of the 'publication road?'" Many authors have had the experience with a typical computer science journal submission incurring much

longer review and turnaround time as compared to many other disciplines. Article reviews often take so long that it discourages authors from submitting to journals. With ACM TIST, we hope to make a difference by ensuring rapid turnaround in article reviews and publication. This involves much dedicated effort from editors and reviewers alike, and such an effort is more than worth it for the benefit of the field.

Looking around, we also see several existing AI-related journals. While many of these journals are of top quality, none of them are dedicated to AI systems and technology with a multidisciplinary perspective. In this day and age, we see AI gaining greater acceptance in other fields of computer science and in science and engineering in general, which encourages us to become more inclusive in what constitutes intelligent systems and technology, instead of being exclusive. We see an increasingly greater need for articles that explore applications of AI in other fields of computer science, such as computer networks, Web systems, multimedia systems, social and cultural dynamics, software engineering and databases, as well as studies in brain sciences, bioinformatics, chemistry, and other natural science and engineering fields. In addition to academics, there is also an increasing demand for articles that cater to industrial practitioners, who are indeed a major part of the ACM Special Interest Group in Artificial Intelligence (ACM SIGART).

The style of this new ACM journal is similar to many other ACM Transactions with submissions received through the ACM Manuscript Central system (<http://mc.manuscriptcentral.com/tist>). The journal expects to initially publish four issues per year with five to ten articles per issue and around 20 to 25 ACM publication pages per article. Extensions of conference publications should include a significant amount of new contribution and clearly state the differences from the conference versions.

The new ACM journal cannot be a success without the great effort of many dedicated individuals. From the outset, we have been fortunate enough to have the strong support from many experienced and well-known researchers in all walks of the intelligent systems life. From these people, an advisory board has been formed to benefit from the wisdom shared by seasoned experts in the long-term well-being of the journal, and a list of strong associate editors has been created to manage the contents of the journal. We are also grateful for the support from many special-issue guest editors and reviewers who have already contributed much to the journal. At this early stage, we have seen evidence of overwhelming support from the community with more than 200 submissions to the journal in the first eight months of the journal's operation. We are confident that the journal will become a centerpiece for the development of intelligent systems and technology. We also welcome ideas for improving the review process and quality of the journal.

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REFERENCES

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