

Editorial

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With this issue, Data Mining and Knowledge Discovery celebrates 10 years of publication. Data Mining is arguably the most successful area of research to emerge from Artificial Intelligence. It has had a major impact in industry and society. At the same time, research in the field has achieved tremendous advances. These advances continue apace, and the field remains as active and innovative as ever.

This journal has grown alongside the research field it serves. As the premier journal on Data Mining, DMKD has helped foster the discipline and has in turn been nurtured by the discipline's growth and strength, leading to its current high impact rating of 2.105. The journal has a proud record of high standards, provides rapid assessment of submissions and allows authors to retain copyright of their published articles.

To mark this tenth anniversary, we have invited some of the field's leading contributors to provide position papers on topics of their choice. They have been asked to share their insights without the usual emphasis on theoretical and empirical evidence. Each of the six contributions has exploited this opportunity in a different and interesting way.

[Faloutsos and Megalooikonomou \(this issue\)](#) argue that compression and Kolmogorov Complexity provide unifying frameworks for the field of data mining and explore the consequences that follow from that viewpoint.

[Domingos \(this issue\)](#) argues for the need to augment traditional data mining processes with a capacity to utilize more knowledge. He provides a summary

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and discussion of work at the University of Washington that addresses this issue by using the new formalism of *Markov logic*.

Ramakrishnan and Chen (this issue) present *cube-space data mining*, a framework for exploratory data mining that unifies OLAP and standard data mining approaches. They argue that this provides a rigorous exploratory framework that supports the “combined process of data selection and transformation, parameter and algorithm selection, and model construction.”

Han, Cheng, Xin and Yan (this issue) present a comprehensive survey of the field of frequent pattern mining together with an analysis of future directions.

Kriegel, Borgwardt, Kröger, Pryakhin, Schubert and Zimek (this issue) discuss issues that they believe will shape data mining and knowledge discovery into the future, including the need to directly analyze complex data, the importance of temporal data mining, prospects for significant advances in data preprocessing, and trends that may contribute to improving usability.

Finally, Piatetsky-Shapiro (this issue) applies text mining to produce a longitudinal analysis of the KDNuggets newsletter, showing the large shifts that have occurred in this major repository of the community’s activity over the past decade, as data mining and knowledge discovery have moved into mainstream commercial applications.

This interesting mix of personal insights provides a useful starting point for the next 10 years of research in our exciting and dynamic field.

References

- Domingos P (this issue) Toward knowledge-rich data mining
Faloutsos C, Megalooikonomou V (this issue) On data mining, compression, and Kolmogorov complexity
Han J, Cheng H, Xin D, Yan X (this issue) Frequent pattern mining: current status and future directions
Kriegel H-P, Borgwardt KM, Kröger P, Pryakhin A, Schubert M, Zimek A (this issue) Future trends in data mining
Piatetsky-Shapiro G (this issue) Data mining and knowledge discovery – 1996 to 2005: overcoming the hype and moving from University to Business and Analytics
Ramakrishnan R, Chen B-C (this issue) Exploratory mining in cube space