

## **CHARTER RENEWAL APPLICATION SIAG SDM (Data Mining & Analytics)**

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Data Mining & Analytics. The SIAG/DMA was originally formed under the aegis of SIAM on July 17, 2011 by the SIAM Council and by the SIAM Board of Trustees. This is the fourth charter renewal to be renewed by the council and board thereafter. The SIAG had 1194 members as of December 31, 2018; of these, 896 were students.

The aim of the SIAM Activity Group on Data Mining is to advance the mathematics of data mining, to highlight the importance and benefits of the application of data mining, and to identify and explore the connections between data mining and other applied sciences. Within the framework of SIAM, the SIAG will conduct activities that implement its purposes.

The SIAG on Data Mining and Analytics organizes activities in Data Mining. The SIAG is expected to:

1. Organize mini-symposia at the SIAM Annual Meeting.
2. At least once every seven years, either organize a track of at least six mini-symposia at the SIAM Annual Meeting or have an activity group meeting held jointly with the annual meeting. The VP for Programs and the VP at Large will coordinate the scheduling with the SIAG chair.
3. Organize a yearly SIAM International Conference on Data Mining (SDM). The program director and chairperson of the SIAG are responsible for ensuring the continuity of SDM, including either serving as co-chairs of the meeting or naming appropriate designees. The organizing committee must be approved by the VP for programs at least 16 months before the conference.

The SIAG has complemented SIAM's activities and supported its proposed functions. The answers to the questions below indicate how this was accomplished and what the officers propose as the future directions for the SIAG.

1. How is the field covered by the activity group doing? Is it growing? Is the focus shifting? What have been the significant advances over the past two years?

The field of data mining and analytics is rapidly growing. This growth includes both breadth and depth. There are new applications that recognize the importance and potential of data analysis. At the same time, even in traditional fields of data mining there are new problems, for which data-driven solutions are being sought.

In addition to the overall growth, another emerging trend is the need for rigor in data analysis, which provides a great opportunity for the SIAM community.

2. How is the activity group doing? Is it remaining vibrant? Is the size of the SIAG stable or increasing? How is the SIAG keeping up with the changes in the field? How are the broader interests of SIAM reflected in the activities of the SIAG?

The activity group is enjoying a growth in membership and is now the fourth largest activity group with about 1200 members. It is also remarkable that about 900 of these members are students, and thus the future looks bright. With such growth the activity group is currently considering if it should broaden its scope. In particular, the activity group has been active in initiating another conference, SIAM Conference on Mathematics of Data Science, which will be co-located with SIAM Data Mining in 2020. This conference aims to reach out to a broader community within SIAM.

3. Please list conferences/workshops the activity group has sponsored or co-sponsored over the past two years, and give a brief (one sentence or phrase) indication of the success or problems with each.

The activity group organized its annual conference, SIAM Conference on Data Mining 2018 and 2019.

Also, the Data Institute SF Annual Conference (DSCO19) held March 10-12, 2019 in San Francisco, "in-cooperation" with SIAG/DMA.

4. Please indicate the number of minisymposia directly organized by the activity group at the last two SIAM Annual Meetings. When did the SIAG last organize a track of minisymposia at an annual meeting?

The activity group has not initiated minisymposia at the previous annual meeting or the ICIAM meeting this summer, but our members were active participants. The activity group has organized a track at the 2017 Annual meeting.

In terms of engagements with broader SIAM community, our focus has been on the new SIAM conference.

5. Please indicate other activities sponsored by the activity group, to include newsletters, prizes and web sites. Have each of these been active and successful?

The activity group maintains an active mailing list.

6. What activities are planned and proposed for the next period of the charter? Please describe scheduled and suggested future activities in detail.

The annual conference, SDM will be the main activity. We are currently considering how to engage with the broader community and the new conference on Mathematics of Data Science.

7. How can SIAM help the activity group achieve its goals?

Data Mining and Analytics is growing and evolving rapidly. We are grateful for SIAM's support of the conference and the new journal on Mathematics of Data Science. We hope this support will continue. We also think that SIAM can help us connect with the broader community of data science not just the data mining community.

8. How can the activity group help SIAM in its general role of promoting applied mathematics and computational science?

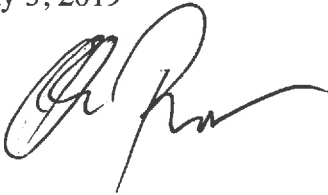
As we have stated earlier, data mining and analytics is an emerging area, and this activity group can attract new members and new groups to the SIAM community. For instance, many members of this activity group have collaborations with the statistics community, which is under represented within SIAM. We hope to build on such collaborations to close the gap between communities.

Another area where this activity group may help is ties to industry. Many professionals of data mining and analytics hold positions in research labs in the industry, and members of the SIAG have strong ties to industry. We can build on such ties to better work with the industry.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a two-year operating period beginning January 1, 2020.

Ali Pinar, Chair of the SIAG on Data Mining and Analytics

May 3, 2019

A handwritten signature in black ink, appearing to be 'Ali Pinar', written in a cursive style.