

results. Using one optimized implementation that is available on a platform allows the comparison of different methods on different data sets.

4.5 Evaluation criteria

Once the methods have been added another consideration is to cite a specific dataset and to include a brief summary of the performance of the proposed method. Defining performance metrics for control monitoring methods (a task not yet formally addressed in literature) will further promote relevant research. Some aspects that such performance metrics should cover:

- Level of user-input required (qualitative):
 - Whether the method requires user-defined parameters, how many parameters are required, and how robust performance is for incorrect parameter selection;
- Computational performance (qualitative or quantitative):
 - Processing requirements for training and application;
 - Memory requirements for training and application
- Accuracy and precision (qualitative and quantitative):
 - Ability of method to detect and identify control faults correctly (robustness).

5 CONCLUSIONS

This paper describes a voluntary initiative by academic researchers to further the use of data-driven methods for control loop performance monitoring. The host institution - South African Council for Automation and Control (SACAC) is a non-profit organisation with the interest of furthering the use of new technologies in automation and bridging the gap between industry and academia.

The authors firmly believe that the field of data-driven methods for CPM can be greatly enhanced by having comparable and standardised data sets that can be used for testing. As a result, the authors hope that production companies will be increasingly and consistently use CPM tools to tackle control loop performance problems.

As a first step, only SISO PID data of the most common fault categories are available on the platform. All colleagues are invited to submit their data sets and contribute to the discussion. The database is still in the process of being set up so there is room to improve, correct and optimize the data content and access.

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