A Real-Time, Flexible Logging and Monitoring Infrastructure for MonPoly

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1 Introduction

MonPoly [3] is a tool for runtime monitoring, also called Runtime Verification (RV) [1]. Runtime monitoring is a method for checking a systems behaviour against a formal specification during or after execution of the system. If the monitoring happens during execution this is called online monitoring and if it is done after the system is done executing we call this offline monitoring. MonPoly is capable of both forms of monitoring. The monitoring is done on a trace of the system. A trace refers to a timestamped log of events.

1.1 Metric First-Order Temporal Logic

MonPoly can be used to monitor a subset of Metric First-Order Temporal Logic (MFOTL) [2].

1.2 MonPoly

1.3 Time Series Databases

2 Architecture

3 Algorithms

4 Implementation and Evaluation

5 Conclusion

References

[1] Ezio Bartocci et al. *Lectures on Runtime Verification*. Ed. by Ezio Bartocci and Yliès Falcone. Vol. 10457. Springer International Publishing, 2018. ISBN: 978-3-319-75631-8. DOI: 10.1007/978-3-319-75632-5. URL: http://link.springer.com/10.1007/978-3-319-75632-5.

[2] David Basin et al. "Monitoring Metric First-Order Temporal Properties". In: *Journal of the ACM (JACM)* 62 (2 2015), pp. 1–45. ISSN: 0004-5411.

[3] David A Basin, Felix Klaedtke, and Eugen Zalinescu. "The MonPoly Monitoring Tool." In: *RV-CuBES* 3 (2017), pp. 19–28.