

EINLADUNG

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Titel: iSAX 2.0: Indexing and Mining One Billion Time Series

Abstract:

There is an increasingly pressing need, by several applications in diverse domains, for developing techniques able to index and mine very large collections of time series. Examples of such applications come from astronomy, biology, the web, and other domains. It is not unusual for these applications to involve numbers of time series in the order of Hundreds of millions to billions. In this paper, we describe iSAX 2.0, a data structure designed for indexing and mining truly massive collections of time series. We show that the main bottleneck in mining such massive datasets is the time taken to build the index, and we thus introduce a novel bulk loading mechanism, the first of this kind specifically tailored to a time series index. We show how our method allows mining on datasets that would otherwise be completely untenable, including the first published experiments to index one billion time series, and experiments in mining massive data from domains as diverse as entomology, DNA and web-scale image collections.

Themis Palpanas is a professor of computer science at the University of Trento, Italy. He received the BS degree from the National Technical University of Athens, Greece, and the MSc and PhD degrees from the University of Toronto, Canada. Before joining the University of Trento, he worked at the IBM T.J. Watson Research Center. He has also worked for the University of California, Riverside, and visited Microsoft Research and the IBM Almaden Research Center. His interests include data management, data analysis, streaming algorithms, and business process management. His research solutions have been implemented in world-leading commercial data management products and he is the author of five US patents, three of which are part of commercial products in multi-billion dollar markets. He is the recipient of two Best Paper awards (ICDE 2010 and ADAPTIVE 2009). He is a founding member of the Event Processing Technical Society, and is serving on the Editorial Advisory Board of the Information Systems Journal and as an Associate Editor in the Journal of Intelligent Data Analysis. He is a General Co-Chair for VLDB 2013, has served on the program committees of several top database and data mining conferences, including SIGMOD, VLDB, ICDE, KDD, and ICDM, and has been a member of the IBM Academy of Technology Study on Event Processing.

Es laden ein: Die Dozenten der Informatik