Abstract

Detecting outliers has attracted the attention of researchers ever since it was found useful to uncover latent, unexpected, interested and previously unknown knowledge. There are many real world utilities of outlier detection such as change monitoring, rare event discovery, fraud detection, and event change detection, alarm systems, revealing trend occurrences and finding strange patterns. Time series analysis can help detect outliers and discover knowhow for efficient decision making. Outlier detection mechanisms that came into existence dealt with plethora of problems. In this paper, our focus is on analyzing strange behaviours in activities of daily living. We proposed two approaches towards adult daily life analysis. Both are data mining approaches that extract knowledge from underlying dataset. Top-K probabilistic analysis and outlier detection are the two mechanisms used to analyze adult life. The top-k analysis brings about the prevalent behavioural dynamics in adult life while the outlier detection throws light into observations that are peculiar and do not match with other observations. We used a time series dataset named Activities of Daily Living (ADLs) collected from UCI machine learning repository. We built a prototype to demonstrate the proof of concept. The empirical results are
encouraging.

References


Index Terms

Computer Science Information Sciences

Keywords

Data mining, outlier detection, top-k queries, adult life analysis