

Evaluation of burnout prediction using time series analysis methods

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Introduction. The study focuses on measuring the effectiveness of various time series analysis methods used for burnout prediction. The aim is to outline the possible problems that many researchers face and suggest various ways to apply the methods. The question about the possibility of accurately predicting burnout dates with statistical and machine learning methods for time series analysis is in need of research. People's lives can be described through various forms of time-series data ranging from university schedules to google calendar data, yet it is undoubtedly difficult to label the data in order to properly outline what contributes to burnout and what does not.

Main part. The first difficulty when it comes to analyzing burnout is collecting data. There are many sources of various data that can be transformed into time series, yet it is unclear which is the most effective. In this paper the main focus will be on analyzing one's personal schedule - one that can be put together through google calendar or a logging app, since it provides the most accurate depiction of one's daily routine.

Rolling-Window Estimation is the most basic way of analyzing time series data implementing the "tomorrow will be the same as yesterday" approach. If we take the average amount of working or studying hours labeled as "exhausting activities", it will be easy to detect anomaly high values of exhausting hours in a given time period, which will lead us to detecting the most dangerous period where the person is most likely to fall into a burned out state.

Conclusion. Statistical and basic machine learning models are incapable of predicting the exact burnout date since burnout is a gradual process, yet these methods can still be used in the workplace and for personal use in order to prevent severe consequences from ignoring the upcoming exhaustion.

Sources:

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2. Introduction to Time Series and Forecasting, Second Edition Peter J. Brockwell Richard A. Davis // p 83-85