

The Summer Undergraduate Research Fellowship (SURF) Symposium
2 August 2018
Purdue University, West Lafayette, Indiana, USA

Time-series Clustering Methods for Medical Adherence

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ABSTRACT

Medication adherence is the measure of how well a patient can comply with the instructions to their prescription. If patients are non-adherent, this can have a major consequence to their health. SmartMedReminder medication bottle caps have provided a way to measure information about when a patient takes their medication on a day-to-day basis. Given this data, patients can be clustered into groups to better understand patterns in medical adherence. This paper will focus on exploring various time-series clustering methods to gain a better understanding of patient groups. The study will explore different feature selections, similarity/dissimilarity measures, and clustering methods. And then, evaluate the significance of the different clusters. Clustering patients will give a better understanding of the heterogeneity of patients' medication usage overall and within specific groupings. The findings for this work can help tailor interventions to patients to improve overall adherence in the future.

KEYWORDS

Time-series clustering, medical adherence, data analysis