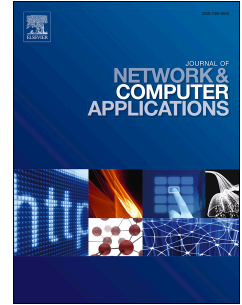


# Accepted Manuscript

Mining productive-periodic frequent patterns in tele-health systems

Walaa N. Ismail, Mohammad Mehedi Hassan, Hessah A. Alsalamah, Giancarlo Fortino



PII: S1084-8045(18)30147-4

DOI: [10.1016/j.jnca.2018.04.014](https://doi.org/10.1016/j.jnca.2018.04.014)

Reference: YJNCA 2128

To appear in: *Journal of Network and Computer Applications*

Received Date: 30 December 2017

Revised Date: 22 March 2018

Accepted Date: 24 April 2018

Please cite this article as: Ismail, W.N., Hassan, M.M., Alsalamah, H.A., Fortino, G., Mining productive-periodic frequent patterns in tele-health systems, *Journal of Network and Computer Applications* (2018), doi: 10.1016/j.jnca.2018.04.014.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Mining Productive-Periodic Frequent Patterns in Tele-health Systems

Walaa N. Ismail<sup>a</sup>

*435204202@student.ksu.edu.sa*

Mohammad Mehedi Hassan<sup>a</sup>

*mmhassan@ksu.edu.sa*

Hessah A. Alsalamah<sup>a</sup>

*halsalamah@ksu.edu.sa*

Giancarlo Fortino<sup>b</sup>

*giancarlo.fortino@unical.it*

<sup>a</sup>*Information Systems Department, College of Computer and Information Sciences, King Saud University, Riyadh, Saudi Arabia*

<sup>b</sup>*Computer Engineering Department of Informatics, Modeling, Electronics and Systems (DIMES), University of Calabria, Italy*

---

## Abstract

Recently, tele-health systems have gained attention from vast research fields because they facilitate remote monitoring of patients (e.g. vital sign data, physical activities, etc.) by utilizing various technologies such as body sensor network, wireless communications, multimedia and human-computer interactions without interrupting the quality of lifestyle. As tele-health generates a huge amount of healthcare data consisting of much useful information, finding hidden information from the data is an important task. The purpose of this work is to facilitate a real-time warning alarm in the context of tele-health remote monitoring using data mining techniques. This can be utilized for the e-wellbeing applications, for example, rehabilitation, early identification of therapeutic issues and emergency warning. In particular, we focus on mining Productive Periodic frequent patterns from incremental databases (such as vital sign data of patients) for various decision makings. Exploring the correlations between periodic frequent vital sign data or items is important since the inherent relationships between the items of patterns are relevant. To mine the correlated periodic frequent patterns from incremental databases, we introduce the productive (i.e. useful) periodic frequent patterns (PPFP) as the set of periodic frequent patterns with periodicities that result from the occurrence of correlated items. We finally design and develop an efficient PPFP mining technique that can mine the complete set

---

\*Corresponding author: Mohammad Mehedi Hassan

Download English Version:

<https://daneshyari.com/en/article/6884700>

Download Persian Version:

<https://daneshyari.com/article/6884700>

[Daneshyari.com](https://daneshyari.com)