Accepted Manuscript

An artificial intelligence framework for compensating transgressions and its application to diet management

Luca Anselma, Alessandro Mazzei, Franco De Michieli

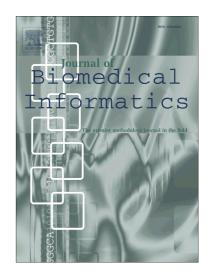
PII: S1532-0464(17)30044-8

DOI: http://dx.doi.org/10.1016/j.jbi.2017.02.015

Reference: YJBIN 2733

To appear in: Journal of Biomedical Informatics

Received Date: 25 October 2016 Accepted Date: 26 February 2017



Please cite this article as: Anselma, L., Mazzei, A., Michieli, F.D., An artificial intelligence framework for compensating transgressions and its application to diet management, *Journal of Biomedical Informatics* (2017), doi: http://dx.doi.org/10.1016/j.jbi.2017.02.015

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.

ACCEPTED MANUSCRIPT

An artificial intelligence framework for compensating transgressions and its application to diet management

Luca Anselma^{a,*}, Alessandro Mazzei^a, Franco De Michieli^b

Abstract

Today, there is considerable interest in personal healthcare. The pervasiveness of technology allows to precisely track human behavior; however, when dealing with the development of an intelligent assistant exploiting data acquired through such technologies, a critical issue has to be taken into account; namely, that of supporting the user in the event of any transgression with respect to the optimal behavior. In this paper we present a reasoning framework based on Simple Temporal Problems that can be applied to a general class of problems,, which we called "cake&carrot problems", to support reasoning in presence of human transgression. The reasoning framework offers a number of facilities to ensure a smart management of possible "wrong behaviors" by a user to reach the goals defined by the problem.

This paper describes the framework by means of the prototypical use case of diet domain. Indeed, following a healthy diet can be a difficult task for both practical and psychological reasons and dietary transgressions are hard to avoid. Therefore, the framework is tolerant to dietary transgressions and adapts the following meals to facilitate users in recovering from such transgressions. Finally, through a simulation involving a real hospital menu, we show that the framework can effectively achieve good results in a realistic scenario.

^aDipartimento di Informatica, Università di Torino, Corso Svizzera 185, 10149, Torino, Italy

^bDipartimento di Scienze Mediche, Ospedale San Giovanni Battista, Università di Torino, Torino, Italy

^{*}Corresponding author

Email addresses: anselma@di.unito.it (Luca Anselma), mazzei@di.unito.it (Alessandro Mazzei), franco.demichieli@unito.it (Franco De Michieli)

دريافت فورى ب متن كامل مقاله

ISIArticles مرجع مقالات تخصصی ایران

- ✔ امكان دانلود نسخه تمام متن مقالات انگليسي
 - ✓ امكان دانلود نسخه ترجمه شده مقالات
 - ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
 - ✓ امكان دانلود رايگان ۲ صفحه اول هر مقاله
 - ✔ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
 - ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات