REMARKS ON USING PATTERN RECOGNITION METHODS IN BIOLOGY

Jacek Międzobrodzki, Tomasz Panz, Andrzej Kasprowicz, Ryszard Tadeusiewicz

Abstract

This paper makes an attempt to present new possibilities for biology, and especially for microbiology, which derive from applying the procedure used in a pattern recognition. There are straightforward advantages to this approach when compared to using standard statistical methods. Firstly, the amount of data needed for the pattern recognition procedure is much smaller, and, moreover, pattern recognition algorithms can deal with incomplete and even erroneous data. Secondly, pattern recognition method leads directly from raw data to strong and easy-to-interpret results that allow definitive statements on the results to be made as "the drug is effective" or "such a way of drug administration is more promising" .

The classic statistical methods usually provide only numeric data, forcing further speculations and interpretation or demanding further tests, often failing because of insufficient amounts of data.

This paper introduces the logic behind pattern recognition and explains the usefulness of this method in mathematical analysis and interpretation of biological experiments, especially in microbiology.

Keywords: data analysis, microbiology, pattern recognition