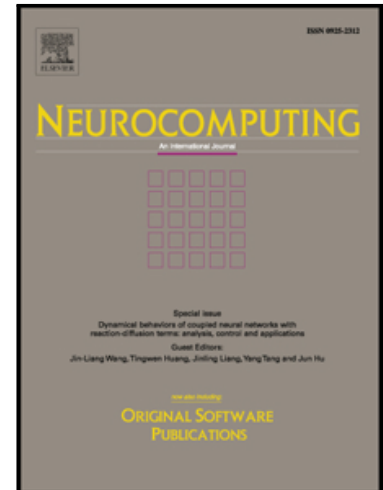


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Gaussian process classification for prediction of in-hospital mortality among preterm infants

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Abstract

We present a method for predicting preterm infant in-hospital mortality using Bayesian Gaussian process classification. We combined features extracted from sensor measurements, made during the first 72 hours of care for 598 Very Low Birth Weight infants of birth weight <1500 g, with standard clinical features calculated on arrival at the Neonatal Intensive Care Unit. Time periods of 12, 18, 24, 36, 48, and 72 hours were evaluated. We achieved a classification result with area under the receiver operating characteristic curve of 0.948, which is in excess of the results achieved by using the clinical standard SNAP-II and SNAPPE-II scores.

Keywords: time series prediction; Gaussian process classification; very low birth weight infants; neonatal intensive care

1. Introduction

This article is related to the use of data-driven methods in the context of digital healthcare and health informatics [1, 2]. In particular, our aim is to develop

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