

I.E. Livieris, T. Kotsilieris, I. Dimopoulos and P. Pintelas. [A decision support software for forecasting patient's length of stay](#) .  
*Algorithms*  
, 2018.



**Abstract** - Length of stay of hospitalized patients is generally considered as a significant and critical factor for healthcare policy planning which consequently affects the hospital management plan and resources. Its reliable prediction in the preadmission stage could further assist in identifying abnormality or potential medical risks to trigger additional attentions for individual cases. During the last decades, data mining and machine learning constitute significant tools in the healthcare domain. In this work, we introduce a new decision support software for the accurate prediction of hospitalized patients' length of stay which incorporates a novel two-level classification algorithm.

Our numerical experiments indicate that the proposed algorithm exhibits better classification performance than any examined single learning algorithm. The proposed software was developed to provide assistance to the hospital management and strengthen the service system by offering customized assistance according to patients' predicted hospitalization time.