A 5/4 linear time bin packing algorithm.

Summary: C. U. Martel [Oper. Res. Lett. 4, 189-192 (1985; Zbl 0572.90074)] published a linear time algorithm with a 4\(3\) asymptotic worst-case ratio for the one-dimensional bin packing problem. The algorithm is based on a linear time classification of the sizes of the items, and thereafter – according to the number of elements in certain subclasses – pairing the items in a clever way. In his paper Martel mentioned a natural generalization of this algorithm, that suggested a 5\(4\) algorithm. Although this seemed to be very simple, the improvement has not been realized until now. In this paper we present an algorithm which uses the ideas of Martel and has a 5\(4\) asymptotic worst-case ratio.

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References:


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