

Hybrid estimation of distribution algorithms for solving a keyboard layout problem

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Abstrak

ABSTRACT

The use of smartphones and handheld devices in our daily activities has sharply increased. The added features of wireless technology and related applications on these devices make it possible to write emails, notes, and long text. Even though the most commonly used electronic input device is a keyboard, very little work has been dedicated for finding an optimal layout for this device. In this research, the aim is to propose a better layout for the single-finger keyboard in terms of rapid typing. The keyboard layout problem can be formulated as a quadratic assignment problem, which is one of the hardest combinatorial optimization problems. Some well-known literary works in English are chosen for estimating the keying-in-time. A variant of genetic algorithm, namely, the estimation of distribution algorithms is used to find a better layout. The new layout is found to be efficient compared with some of the existing prominent keyboard layouts.