

INTISARI

PENGENALAN KARAKTER PLAT NOMOR KENDARAAN MENGGUNAKAN *PARTICLE SWARM OPTIMIZATION*

Oleh

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Sistem pengenalan plat nomor kendaraan berperan penting dalam banyak aplikasi seperti kontrol akses, kontrol lalu lintas, dan pendeteksi kendaraan yang dicuri. Sistem pengenalan plat nomor kendaraan dibagi ke dalam tiga bagian, yaitu: pencarian lokasi plat nomor, segmentasi karakter dan pengenalan karakter.

Penelitian ini bertujuan untuk mengembangkan prototipe aplikasi untuk mengenali karakter yang terdapat di citra plat mobil dengan menggunakan *particle swarm optimization* (PSO). Di dalam pencarian posisi plat nomor, metode yang digunakan didasarkan pada proyeksi histogram horizontal dan vertikal. Di dalam pensegmentasian karakter, digunakan kombinasi metode penemuan lokasi dan ditingkatkan dengan algoritma segmentasi proyeksi vertikal. Di dalam pengenalan karakter, digunakan metode *particle swarm optimization*.

Pengujian terhadap 60 data citra mobil didapatkan hasil keakurasian metode pensegmentasi plat nomor kendaraan sebesar 100%, metode pensegmentasi karakter sebesar 77,1% dan metode pengenalan karakter sebesar 72,9%.

Kata kunci: plat nomor kendaraan, pengenalan karakter, *Particle Swarm Optimization* (PSO)

ABSTRACT

LICENSE PLATE CHARACTER RECOGNITION USING PARTICLE SWARM OPTIMIZATION

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License Plate Recognition system (LPR) plays a significant role in many application such as access control, traffic control, and the detection stolen vehicles. License plate recognition system is divided into three parts: license positioning, character segmentation and character recognition.

This study aims to develop a prototype application to recognize the characters on the image of license plate car using particle swarm optimization (PSO). In license positioning, the license positioning method is based on histogram projection horizontal and vertical. In character segmentation, it adopts a combinative method of locating the original level and improved vertical projection segmentation algorithm. In character recognition, the recognition method is based on particle swarm optimization.

Tests on 60 car image data showed the accuracy of segmentation method of license plate numbers is 100%, the character segmentation method is 77,1% and character recognition methods is 72,9%.

Keywords: license plate, character recognition, Particle Swarm Optimization (PSO)