

## **INTISARI**

### **THE COMPARISON AND EVALUATION OF DIFFERENT APPROACHES IN DESIGNING A MULTI ORIENTATION FACE RECOGNITION SYSTEM**

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Pengenalan wajah telah meningkat selama beberapa tahun terakhir karena cukup bermanfaat bagi sektor mana pun yang menangani data atau informasi klien. Namun, banyak dari sistem pengenalan wajah yang digunakan secara umum saat ini terbatas pada sudut mana sistem dapat mengenali wajah. Ini mungkin tidak cukup karena sifat kemajuan teknologi.

Penelitian ini membahas perlunya penelitian lebih lanjut, kajian dan implementasi sistem pengenalan wajah multi orientasi yang mampu mendeteksi wajah dari berbagai sudut subjek. Penelitian ini mengimplementasikan beberapa (4) algoritma yang sudah ada untuk pengenalan wajah dan membandingkan kinerjanya satu sama lain, dan terhadap kriteria untuk memahami keadaan algoritma ini saat membandingkan subjek multi-sudut bila dibandingkan dengan tampilan depan subjek. Penelitian ini dilakukan dalam bahasa pemrograman Python dan menggunakan beberapa perpustakaan seperti OpenCV. Penelitian ini memfokuskan dirinya di sekitar Database Color FERET.

*Keywords:*

*Deep Learning, Convolutional Neural Networks, CNN, Linear Discriminant Analysis, LDA, Principal Component Analysis, PCA, Eigenface*

## **ABSTRACT**

### **THE COMPARISON AND EVALUATION OF DIFFERENT APPROACHES IN DESIGNING A MULTI ORIENTATION FACE RECOGNITION SYSTEM**

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Face recognition has been on the rise over the last few years as it is quite beneficial to any sector that is handling data or client information. However many of today's general-use face recognition systems are limited in which angles the system can recognize the face from. This may not be sufficient due to the nature of how technology is advancing.

This research discusses the need for further research, study and implementation of a multi orientational face recognition system that is capable of detecting faces from multiple angles of the subject. The research implements multiple (4) already existing algorithms for face recognition and comparing their performance against each other, and against a criteria to comprehend the current state of these algorithms when comparing multi-angled subjects when compared to a frontal view of the subject. The research was conducted within the Python programming language and utilizes multiple libraries such as OpenCV. The research focuses itself around the Color FERET Database.

*Keywords:*

*Deep Learning, Convolutional Neural Networks, CNN, Linear Discriminant Analysis, LDA, Principal Component Analysis, PCA, Eigenface*