

# Pengenalan wajah 3d menggunakan fuzzy manifold dan jaringan saraf tiruan dengan lapis tersembunyi berstruktur hemisfer = 3d face recognition using fuzzy manifold and artificial neural network with hemispheric structured hidden layer

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## Abstrak

[Dewasa ini, teknologi berkembang dengan sangat pesat, salah satu contoh teknologi yang sedang marak beberapa tahun belakangan ini adalah 3D face recognition. Teknologi ini menggabungkan data biometrik berupa wajah orang yang diambil dari beberapa sudut (horizontal dan vertikal) dan jaringan saraf tiruan. Untuk memperbaiki tingkat rekognisi yang rendah pada saat menggunakan data crisp, maka digunakanlah metode fuzzy. Percobaan akan dilakukan sebanyak tiga kali karena terdapat tiga cluster yang masing-masing cluster terdiri dari beberapa set orang. Pertama-tama, data akan diolah secara bertahap pada fase fuzzification dimulai dari parameter ekspresi, orang, dan sudut. Tahapan selanjutnya adalah membuat referensi pada fase fuzzy manifold untuk kemudian digunakan pada fase fuzzy nearest distance. Pada fase fuzzy nearest distance akan dicari jarak terpendek dari data testing dengan referensi yang sudah ada. Hasil keluaran dari sistem ini adalah kombinasi sudut horizontal dan vertikal dari tiap-tiap cluster yang nantinya akan dimasukkan kedalam Jaringan Saraf Tiruan (JST) dengan lapis tersembunyi berstruktur hemisfer untuk mendapatkan tingkat rekognisi. Secara keseluruhan rata-rata tingkat rekognisi setiap cluster sudah bisa mencapai 80%. Hal ini menunjukkan sistem sudah cukup optimal dalam mengenali pola wajah yang ada.

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