ABSTRAK

PENGEMBANGAN APLIKASI KONSULTASI KESEHATAN MENTAL BERDASARKAN RAUT WAJAH DAN KUESIONER DASS-42 BERBASIS ALGORITMA *CONVOLUTIONAL NEURAL NETWORK* (CNN)

(2025:xvii + 72 halaman + 39 gambar + 14 tabel + 11 lampiran)

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Deteksi dini gangguan psikologis seperti depresi, stres, dan kecemasan masih terbatas karena kurangnya kesadaran dan akses yang kurang memadai ke layanan konsultasi kesehatan mental. Penelitian ini bertujuan untuk mengembangkan aplikasi konsultasi kesehatan mental berdasarkan Raut Wajah dan Kuesioner *Depression, Anxiety and Stress Scale* (DASS)-42 yang memanfaatkan algoritma *Convolutional Neural Network* (CNN). Algoritma CNN digunakan untuk mendeteksi dan mengklasifikasikan ekspresi wajah ke dalam kategori emosional seperti marah, kesedihan, kecemasan dan jijik sebagai indikator awal kondisi mental. Untuk melengkapi ini, Kuesioner *Depression, Anxiety and Stress Scale* (DASS)-42 menyediakan penilaian psikologis terstruktur untuk menentukan tingkat keparahan depresi, kecemasan, dan stres. Kombinasi ini menawarkan evaluasi yang lebih komprehensif dan akurat, sehingga dapat menjembatani kesenjangan dalam metode deteksi dini kesehatan mental. Berdasarkan hasil pengembangan dan pengujian, aplikasi konsultasi kesehatan mental berbasis raut wajah dan Kuesioner *Depression, Anxiety and Stress Scale* (DASS)-42, berhasil dibuat dengan memanfaatkan algoritma *Convolutional Neural Network* (CNN) sebagai pendeteksi ekspresi wajah. Sistem mampu mengidentifikasi ekspresi wajah seperti Depresi, Kecemasan, Stress dengan akurasi sebesar 81%, menunjukkan kinerja yang cukup baik dalam mendeteksi tanda-tanda awal gangguan mental.

Kata Kunci: Kesehatan Mental, *Convolutional Neural Network* (CNN), *Depression, Anxiety and Stress Scale* (DASS)-42.

ABSTRACT

DEVELOPMENT OF MENTAL HEALTH CONSULTATION APPLICATION BASED ON FACIAL EXPRESSIONS AND DASS-42 QUESTIONNAIRE BASED ON CONVOLUTIONAL NEURAL NETWORK (CNN) ALGORITHM

(2025:xvii + 72 pages + 39 figures + 13 table + 11 appendices)

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Early detection of psychological disorders such as depression, stress, and anxiety is still limited due to lack of awareness and inadequate access to mental health consultation services. This study aims to develop a mental health consultation application based on Facial Expressions and the Depression, Anxiety and Stress Scale (DASS)-42 Questionnaire utilizing the Convolutional Neural Network (CNN) algorithm. The CNN algorithm is used to detect and classify facial expressions into emotional categories such as anger, sadness, anxiety and disgust as early indicators of mental conditions. To complement this, the Depression, Anxiety and Stress Scale (DASS)-42 Questionnaire provides a structured psychological assessment to determine the severity of depression, anxiety and stress. This combination offers a more comprehensive and accurate evaluation, thus bridging the gap in early detection methods for mental health. Based on the results of development and testing, a mental health consultation application based on facial expressions and the Depression, Anxiety and Stress Scale (DASS)-42 Questionnaire was successfully created by utilizing the Convolutional Neural Network (CNN) algorithm for facial expression detection. The system is able to identify facial expressions such as Depression, Anxiety, Stress with an accuracy of 81%, showing quite good performance in detecting early signs of mental disorders.

Keywords: *Mental Health, Convolutional Neural Network* (CNN), *Depression, Anxiety and Stress Scale* (DASS)-42.