

BAB VI. KESIMPULAN DAN SARAN

6.1. Kesimpulan

Berdasarkan hasil penelitian yang telah dilakukan, maka dapat disimpulkan sebagai berikut:

- 1 Sistem pendeteksian postur kerja berbasis MediaPipe Pose berhasil dikembangkan dan mampu mengekstraksi sudut tubuh pekerja dari dokumentasi foto aktivitas bongkar muat inti sawit. Sistem ini dapat mendeteksi titik-titik landmark tubuh dan menghitung sudut leher, batang tubuh, lengan, serta kaki secara objektif, sehingga meningkatkan akurasi dan konsistensi dalam penilaian postur kerja dibandingkan observasi visual manual.
- 2 Skor REBA berhasil dihitung secara otomatis berdasarkan sudut tubuh hasil ekstraksi MediaPipe Pose. Hasil perhitungan menunjukkan bahwa skor REBA akhir pekerja berada pada rentang 10 hingga 13, dengan rincian skor 10 (kategori risiko tinggi), 11 (kategori risiko sangat tinggi), dan 13 (kategori risiko sangat tinggi). Skor tersebut diperoleh melalui kombinasi nilai Group A (leher, batang tubuh, kaki) dan Group B (lengan atas, lengan bawah, pergelangan tangan), yang kemudian dipadukan pada Tabel C serta ditambahkan faktor aktivitas sebesar 1. Tingginya skor terutama dipengaruhi oleh postur membungkuk pada batang tubuh (trunk) serta penggunaan ekstremitas atas secara intensif saat mengeluarkan inti sawit dari dalam mobil.
- 3 Analisis menunjukkan bahwa aktivitas bongkar muat inti sawit memiliki potensi risiko cedera muskuloskeletal yang signifikan, khususnya pada pinggang, punggung, bahu, dan tangan. Berdasarkan hasil tersebut, disusun rekomendasi perbaikan berupa pengaturan ulang postur kerja agar mengurangi fleksi batang tubuh, penggunaan alat bantu bertangkai panjang untuk mengeluarkan inti sawit, pengaturan durasi kerja (maksimal 30 menit dengan istirahat mikro 5 menit), serta evaluasi postur kerja secara berkala.

- 4 Rekomendasi ini bertujuan menurunkan tingkat risiko ergonomi dan meningkatkan keselamatan serta kenyamanan pekerja secara berkelanjutan.

6.2. Saran

Penelitian selanjutnya disarankan untuk mengembangkan sistem pendeteksian postur kerja berbasis MediaPipe Pose dengan memanfaatkan data video secara real-time serta menambah jumlah dan variasi responden agar hasil penilaian risiko ergonomi menjadi lebih komprehensif. Selain itu, integrasi sistem dengan metode ergonomi lain serta penerapan pada jenis aktivitas kerja manual handling yang berbeda diharapkan dapat meningkatkan akurasi, generalisasi, dan pemanfaatan teknologi kecerdasan buatan dalam mendukung pencegahan risiko ergonomi di lingkungan industri.

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