

IMPLEMENTASI ALGORITMA FAST CORNER DETECTION DAN NATURAL FEATURE TRACKING PADA APLIKASI AUGMENTED REALITY PENGENALAN PEMANASAN GLOBAL

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ABSTRAK

Pemanasan global merupakan isu lingkungan yang penting untuk dikenalkan sejak dini, namun pemahaman siswa sekolah dasar masih terbatas. Penelitian ini bertujuan mengembangkan aplikasi pembelajaran berbasis Augmented Reality (AR) dengan dukungan objek 3D dan audio penjelasan materi. Proses pengujian dilakukan melalui alpha testing menggunakan metode black-box serta beta testing dengan pendekatan Mean Opinion Score (MOS). Hasil alpha testing menunjukkan 146 dari 187 test case berjalan valid dengan tingkat keberhasilan 78,07%. Sementara itu, beta testing memperoleh penilaian “Sangat Baik” dari guru dengan nilai rata-rata 4,23. Temuan ini menunjukkan bahwa aplikasi AR yang dikembangkan berpotensi menjadi media pembelajaran yang menarik, interaktif, dan efektif dalam mengenalkan isu pemanasan global kepada siswa sekolah dasar.

Kata Kunci: Pemanasan Global, Augmented Reality, FAST Corner Detection, Natural Feature Tracking, Mean Opinion Score

***IMPLEMENTATION OF FAST CORNER DETECTION AND NATURAL
FEATURE TRACKING ALGORITHMS ON AN AUGMENTED REALITY
APPLICATION FOR INTRODUCING GLOBAL WARMING***

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ABSTRACT

Global warming is an environmental issue that needs to be introduced from an early age; however, elementary school students' understanding remains limited. This study aims to develop a learning application based on Augmented Reality (AR), supported by 3D objects and audio explanations of the material. The testing process was carried out through alpha testing using the black-box method and beta testing with the Mean Opinion Score (MOS) approach. The alpha testing results showed that 146 out of 187 test cases were valid, with a success rate of 78.07%. Meanwhile, the beta testing received a "Excellent" rating from teachers, with an average score of 4.23. These findings indicate that the developed AR application has the potential to serve as an engaging, interactive, and effective learning medium for introducing the issue of global warming to elementary school students.

Keywords: Global Warming, Augmented Reality, FAST Corner Detection, Natural Feature Tracking

