

## ABSTRAK

ERIC PRATAMA TAN. *Perancangan Dan Implementasi Game Edukasi Berbasis Pose Estimation Untuk Stimulasi Perkembangan Motorik Anak Usia Dini*. Dibimbing oleh TAUFIQURRAHMAN dan SEPTIAN SIMATUPANG.

Penelitian ini bertujuan untuk merancang dan mengimplementasikan game edukasi berbasis *pose-estimation* untuk stimulasi perkembangan motorik anak usia dini. Sistem dikembangkan menggunakan Unity sebagai *game engine* dan MediaPipe untuk mendeteksi gerakan tubuh secara *real-time* melalui *integrated webcam*. Metode pengujian yang digunakan pada penelitian ini adalah *Black Box Testing* dan Kuesioner Likert. Hasil pengujian menunjukkan bahwa sistem berjalan sesuai dengan rancangan dan dapat digunakan. Serta, hasil kuesioner likert menunjukkan bahwa sistem mudah dipahami dan menarik bagi anak usia dini. Dengan demikian, game edukasi berbasis *pose-estimation* dapat digunakan sebagai media pembelajaran alternatif yang mendukung stimulasi perkembangan motorik anak usia dini.

Kata kunci: game edukasi, *pose-estimation*, MediaPipe, Unity, perkembangan motorik, anak usia dini

## **ABSTRACT**

*ERIC PRATAMA TAN. Design and Implementation of a Pose Estimation-Based Educational Game for Stimulating Early Childhood Motor Development. Supervised by TAUFIQURRAHMAN and SEPTIAN SIMATUPANG.*

*This study aims to design and implement a pose estimation-based educational game to stimulate motor skill development in early childhood. The system was developed using Unity as the game engine and MediaPipe to detect body movements in real-time via an integrated webcam. Black Box Testing and Likert scale questionnaires were employed to evaluate the system. Testing results indicate that the system functions according to the design and is fully operational. Furthermore, the Likert questionnaire results show that the system is easy to understand and engaging for young children. Thus, this pose-estimation-based educational game can serve as an alternative learning tool to support motor skill development in early childhood.*

*Keywords: educational game, pose-estimation, MediaPipe, Unity, motor skill development, early childhood*